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Figure 1

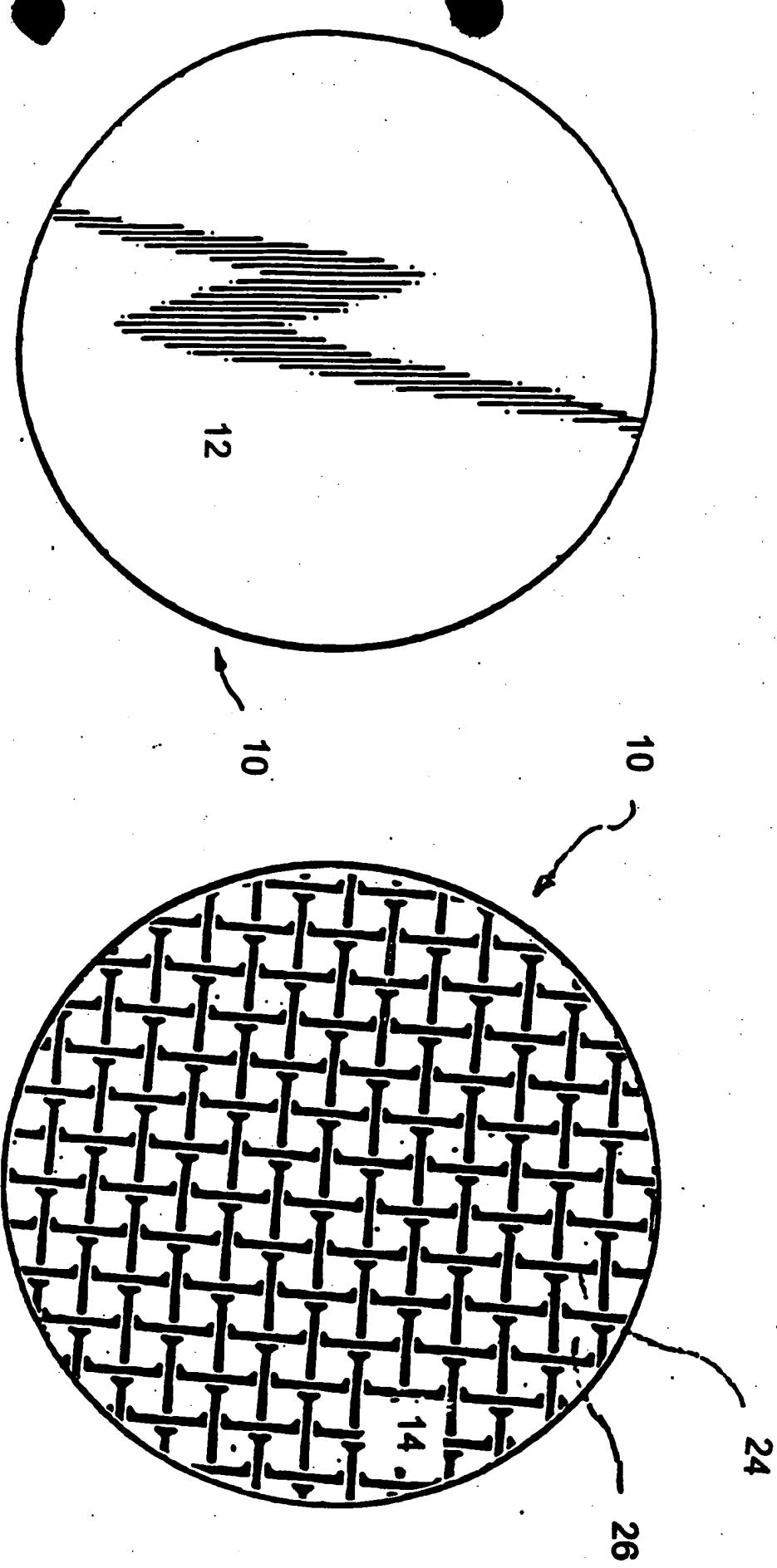


Figure 1a

Figure 1b

Figure 2

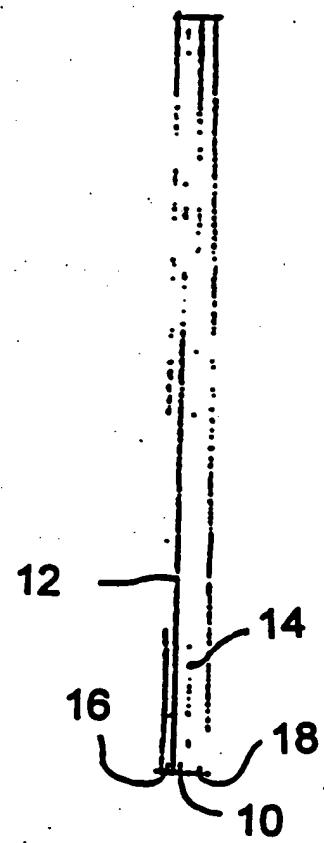


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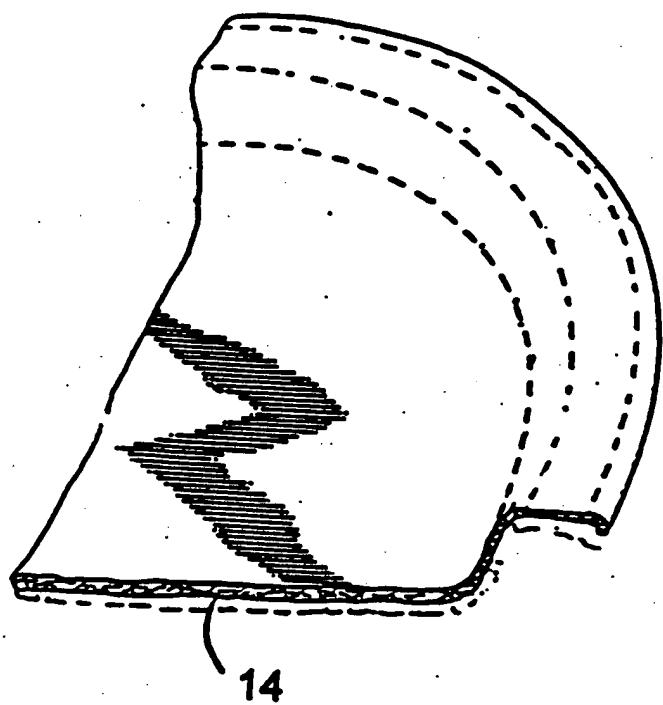


FIGURE 4d

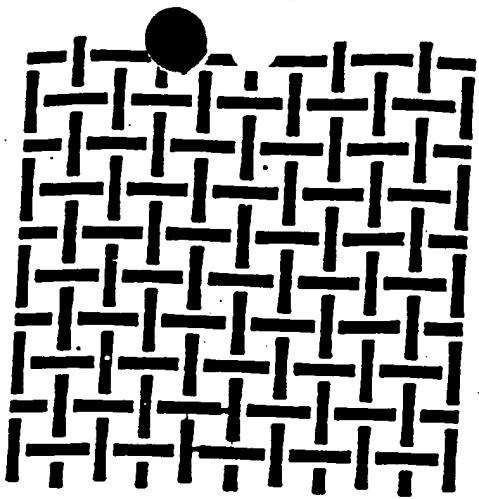


FIGURE 4e

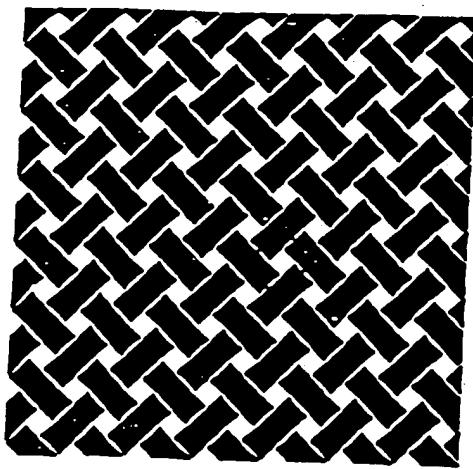


FIGURE 4f

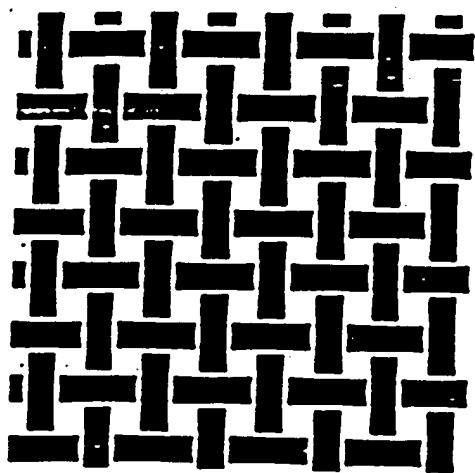


FIGURE 4a

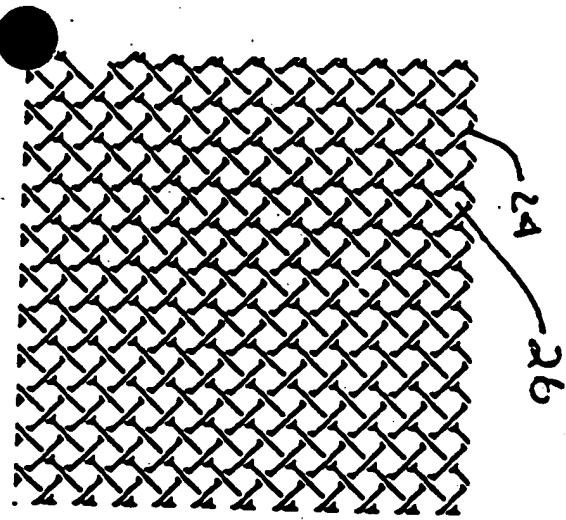


FIGURE 4b

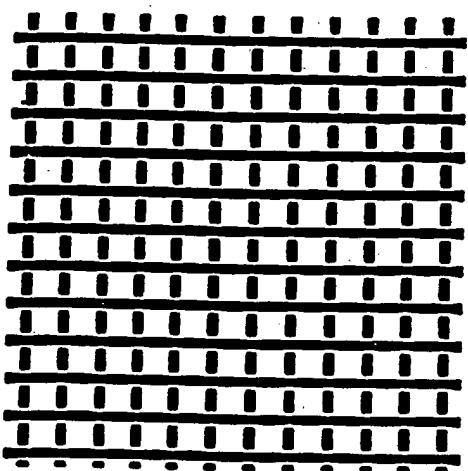


FIGURE 4c

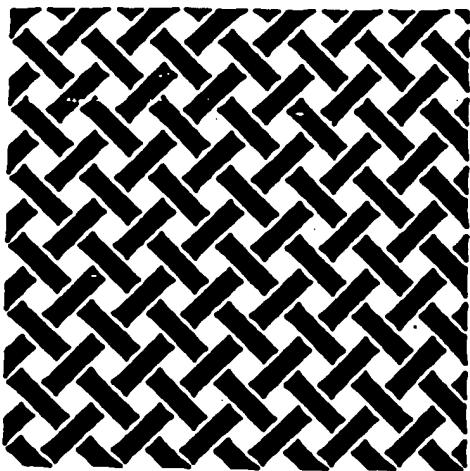


FIGURE 5

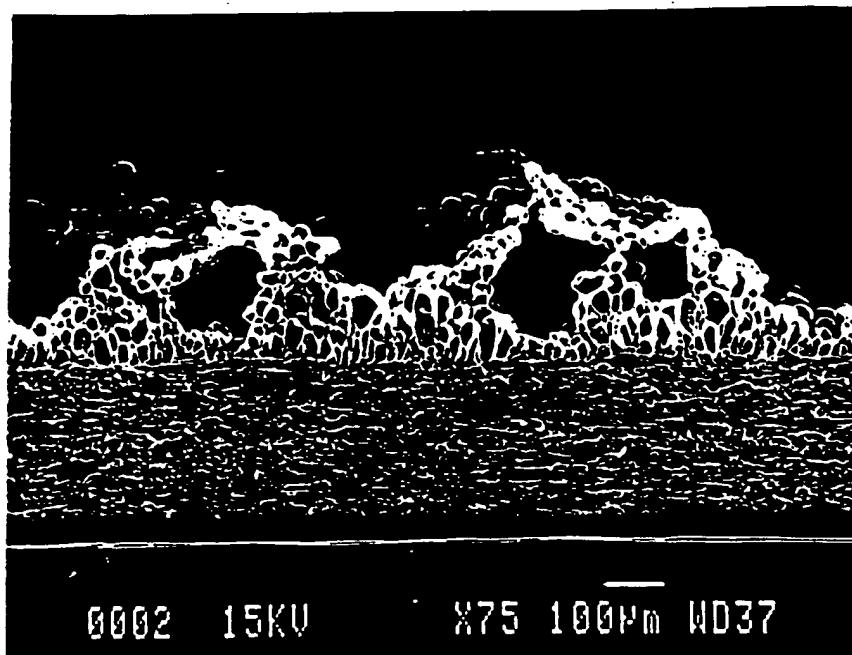


FIGURE 6
Coating Coverage Area vs. Coating Weight

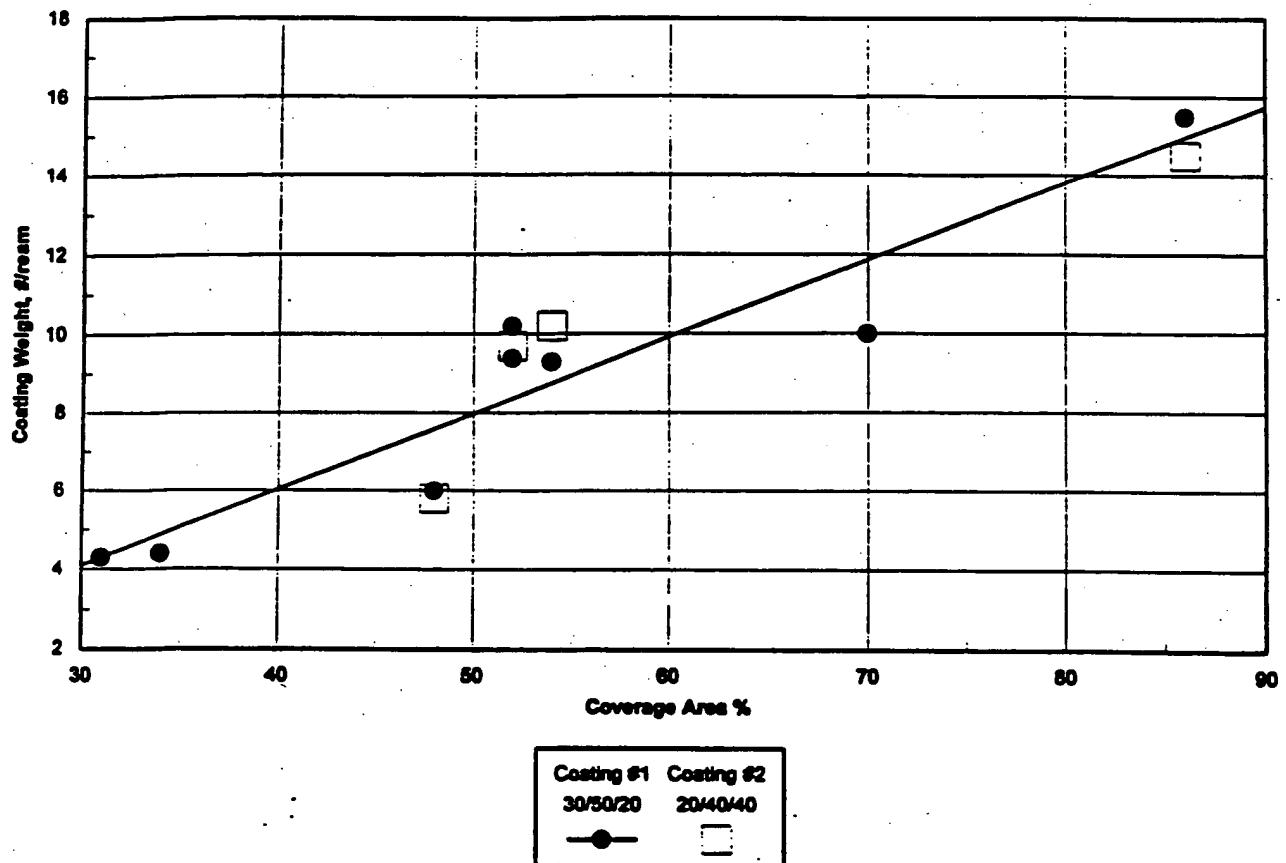
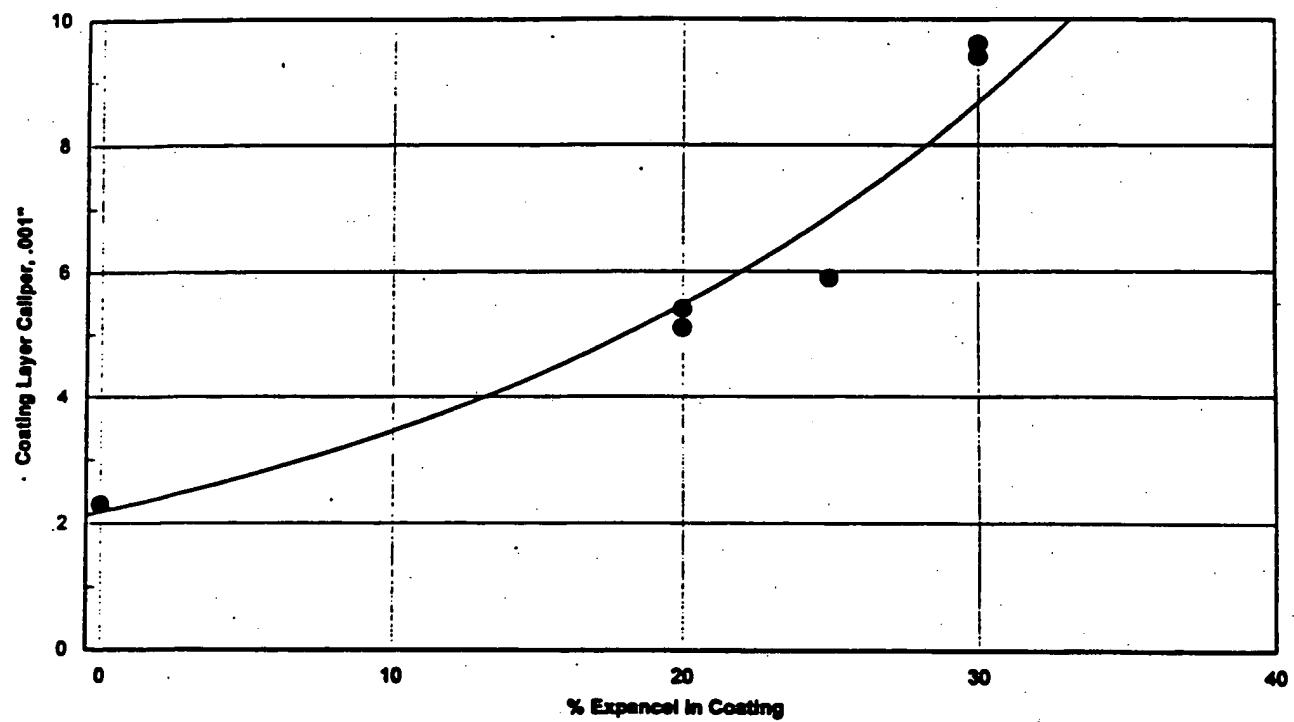


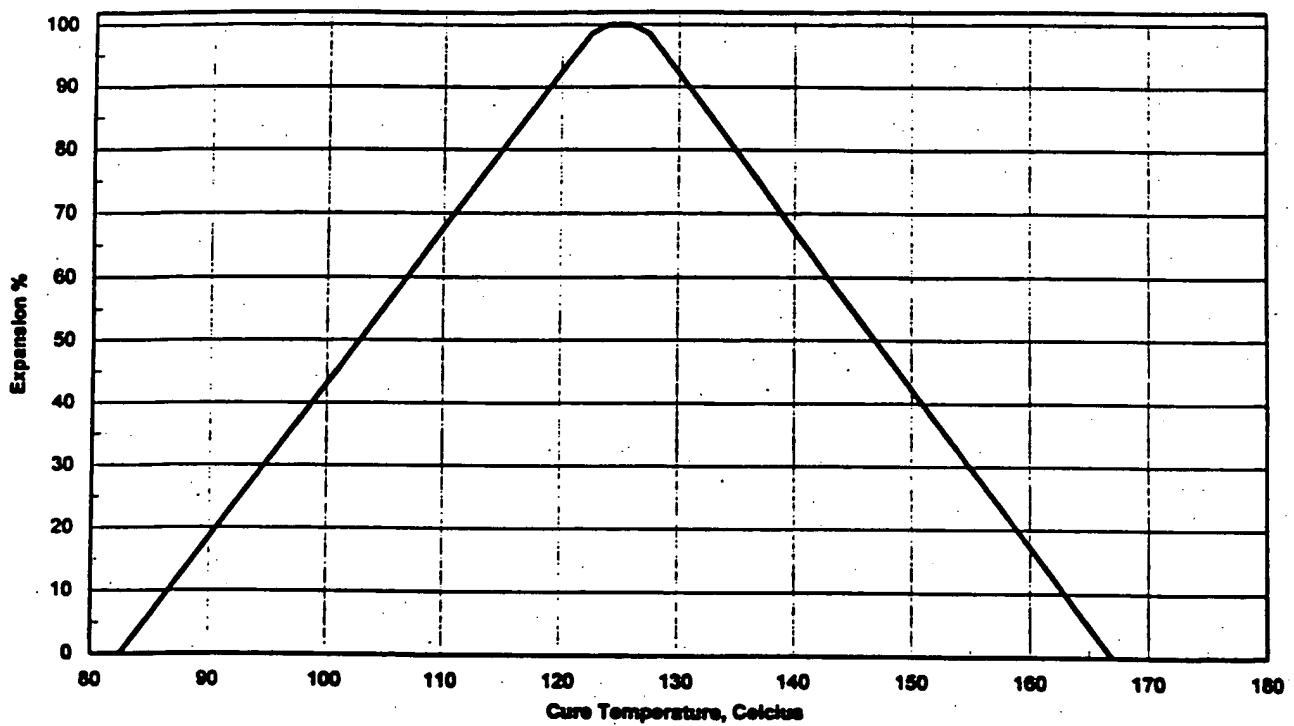
FIGURE 7
Coating Caliper vs. % Expance



S504 Latex

40-50%

FIGURE 8
% Expansion vs. Cure Temperature



Expacel
820wU

FIGURE 9A
Coefficient of Friction

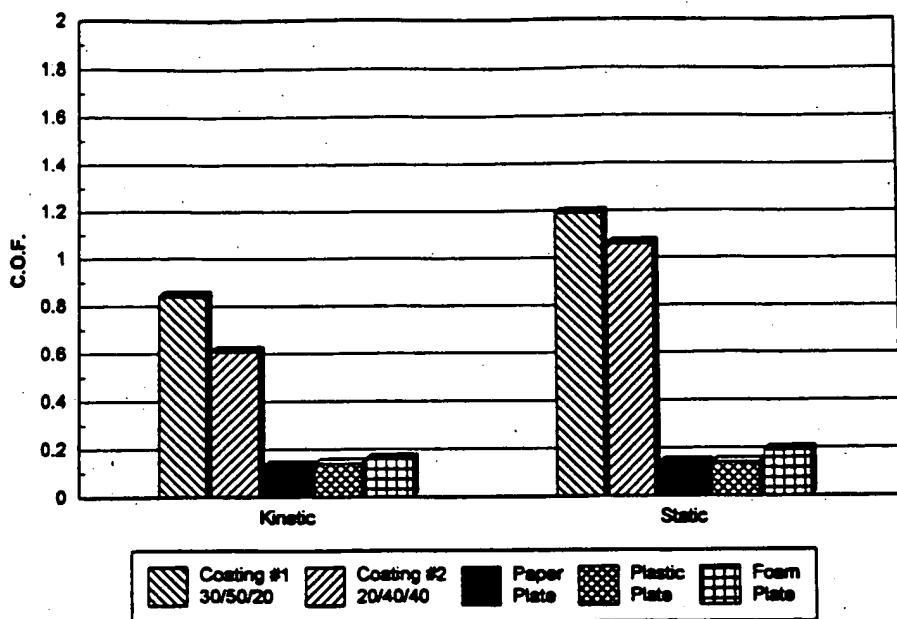


FIGURE 9B
Coefficient of Friction

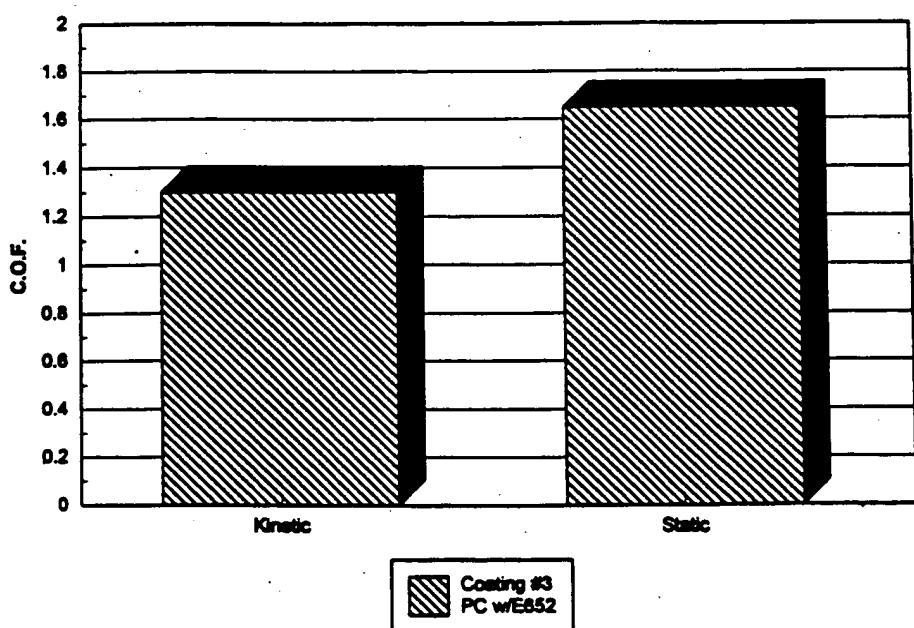


FIGURE 10
Coefficient of Friction vs. Cure Temperature

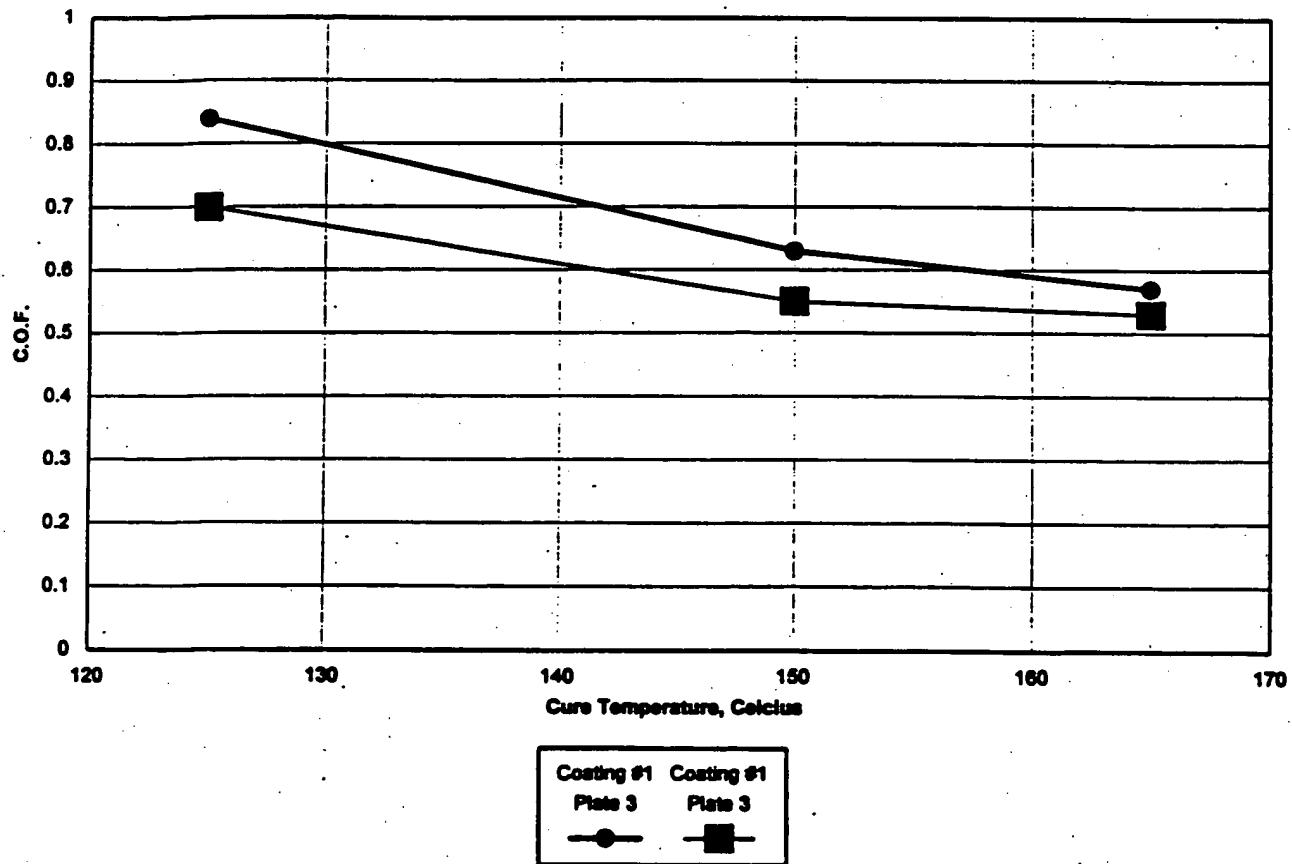


FIGURE 11
Coefficient of Friction vs. Coating Coverage Area

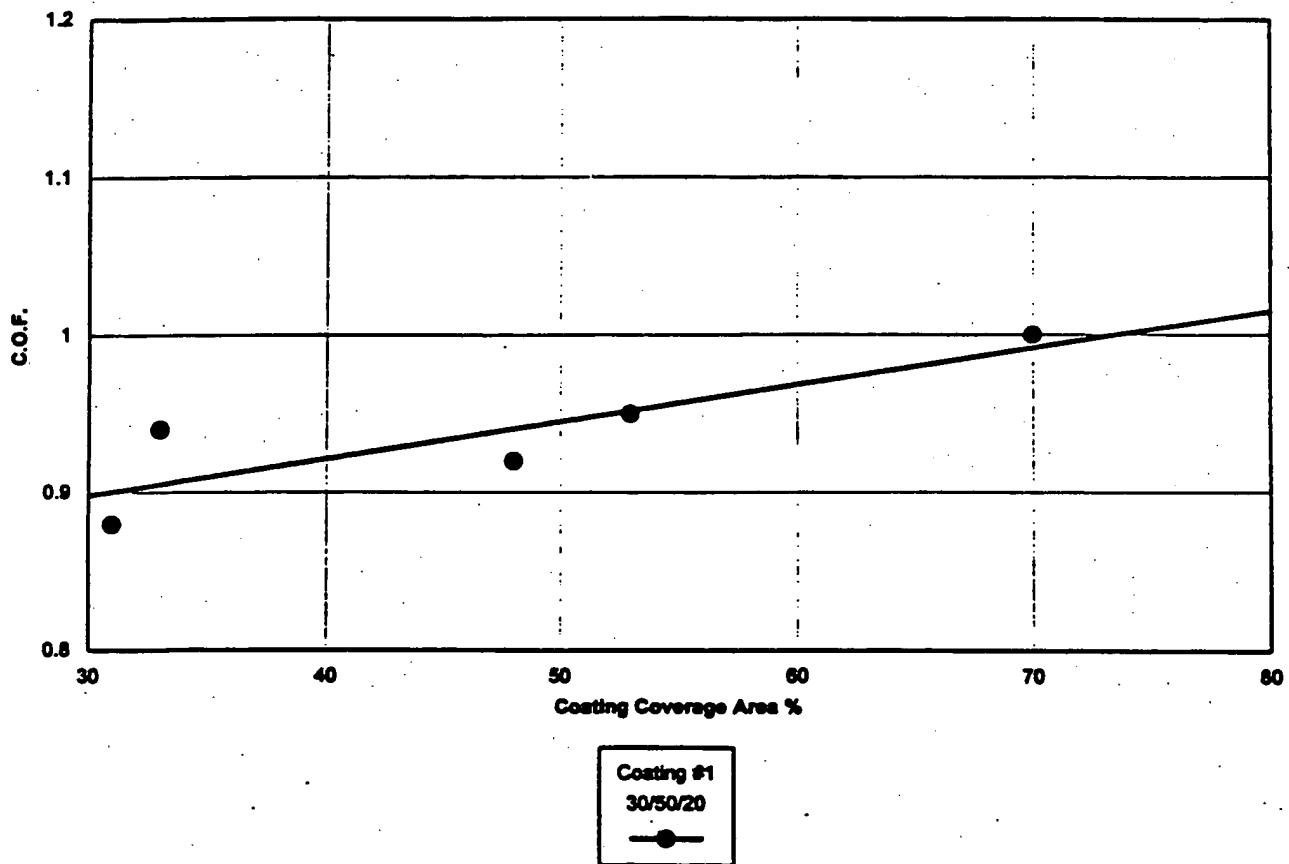


FIGURE 12
Garns Heat Transfer Test
Coating Formulation #1

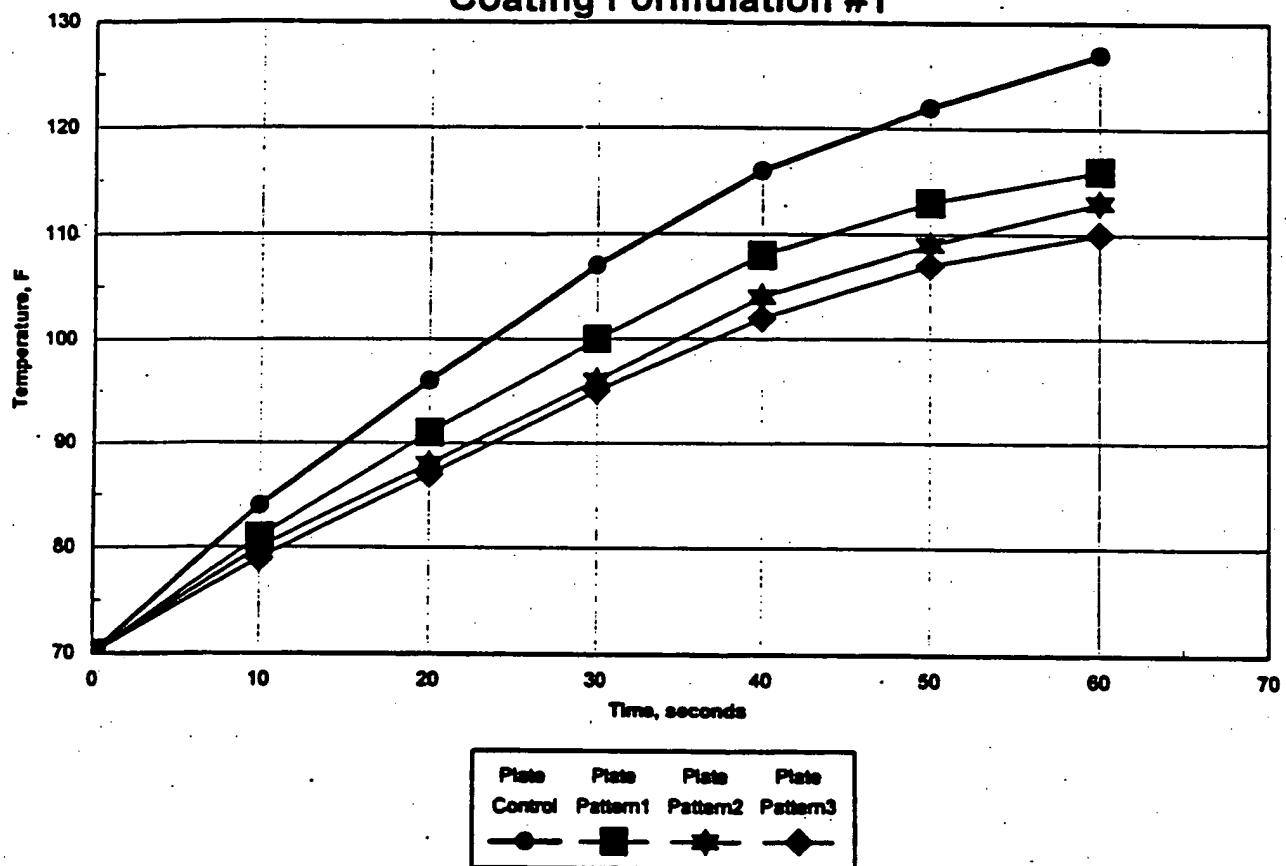


FIGURE 13
Garns Heat Transfer Test
Coating Formulation #1

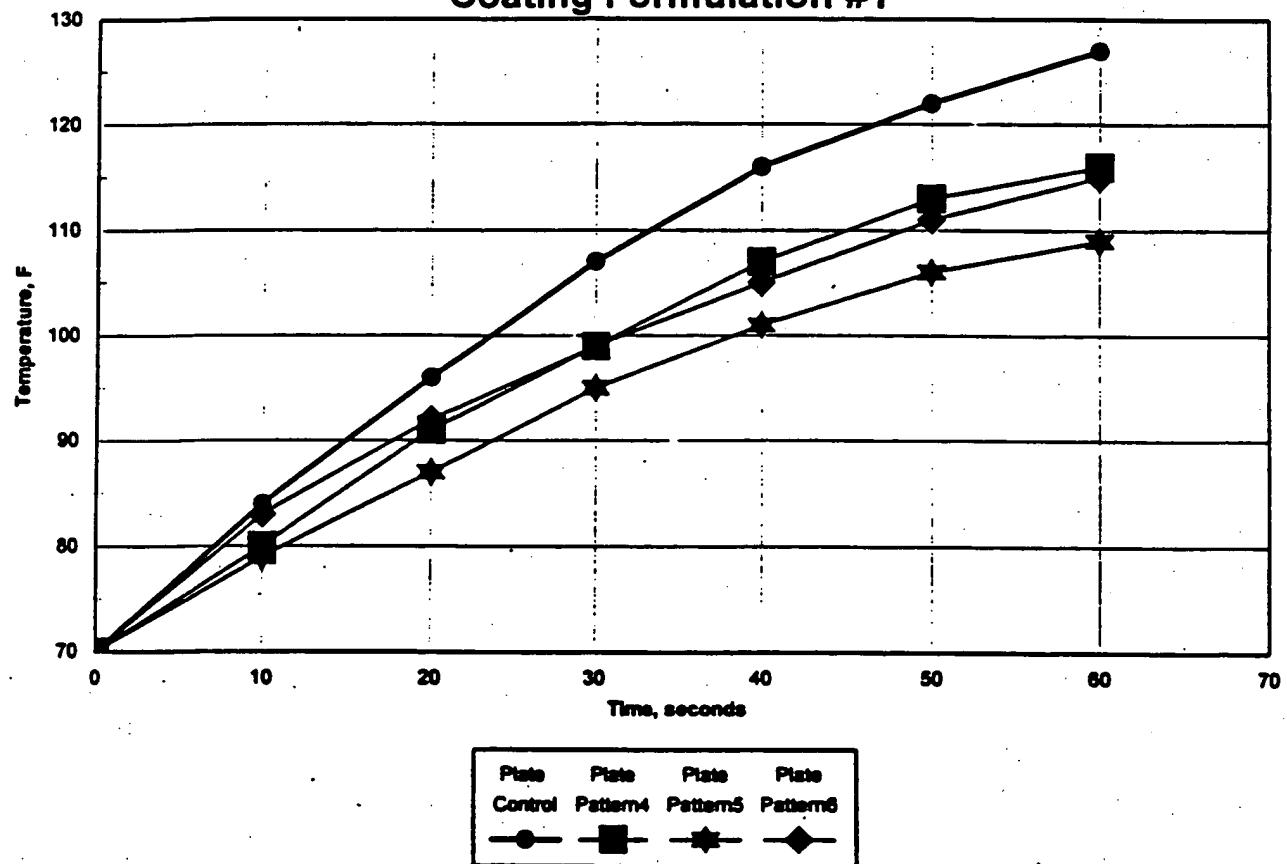


FIGURE 14
Garns Heat Transfer Test

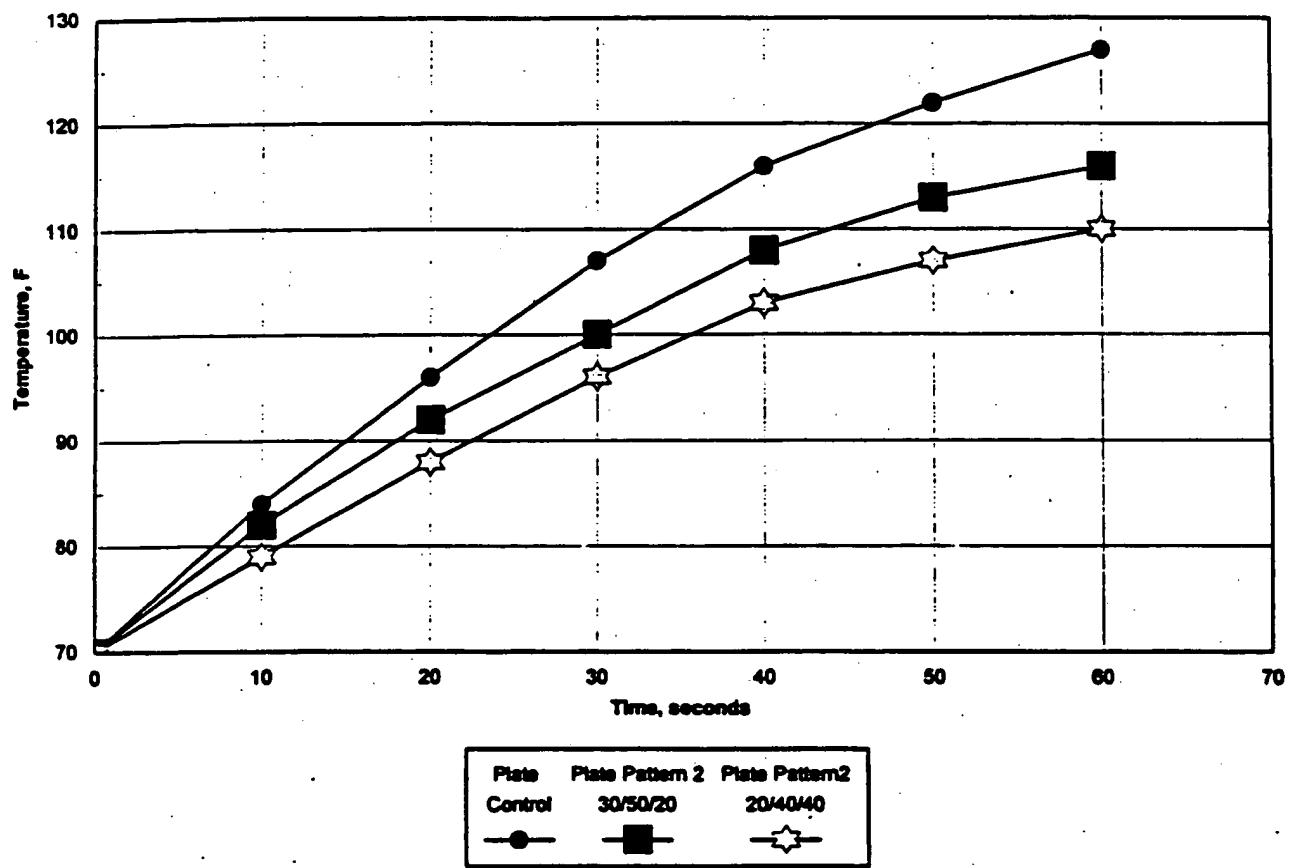
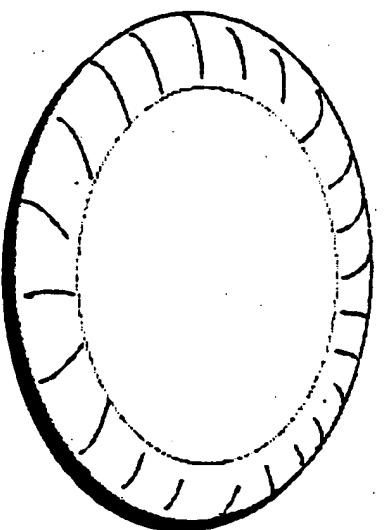
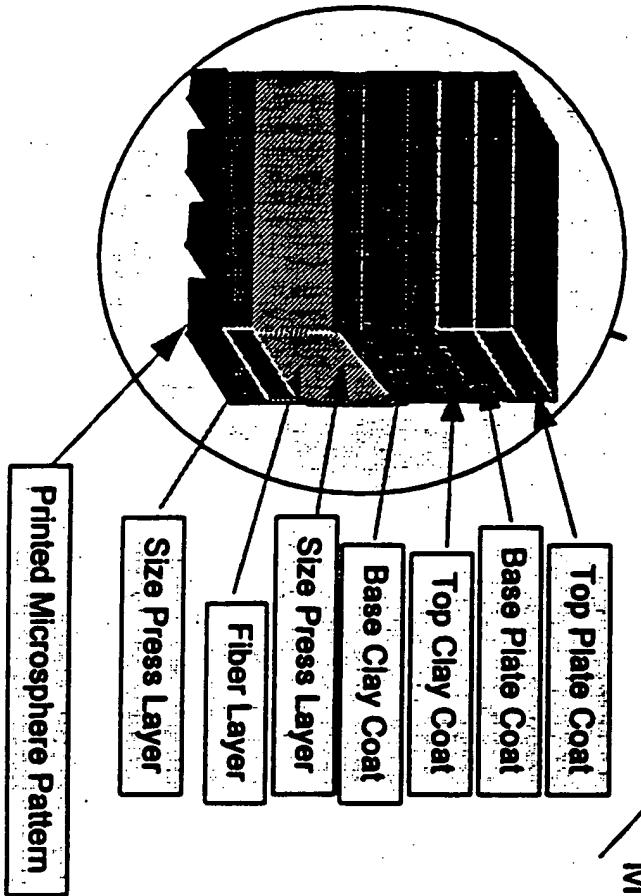


Figure 15

Top View



Bottom View



Cross-Section
Side View

Printed
Microsphere
Pattern

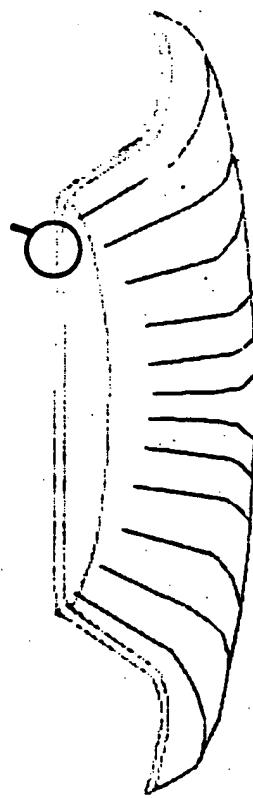


Figure 16

Cross-Section Through a Cup

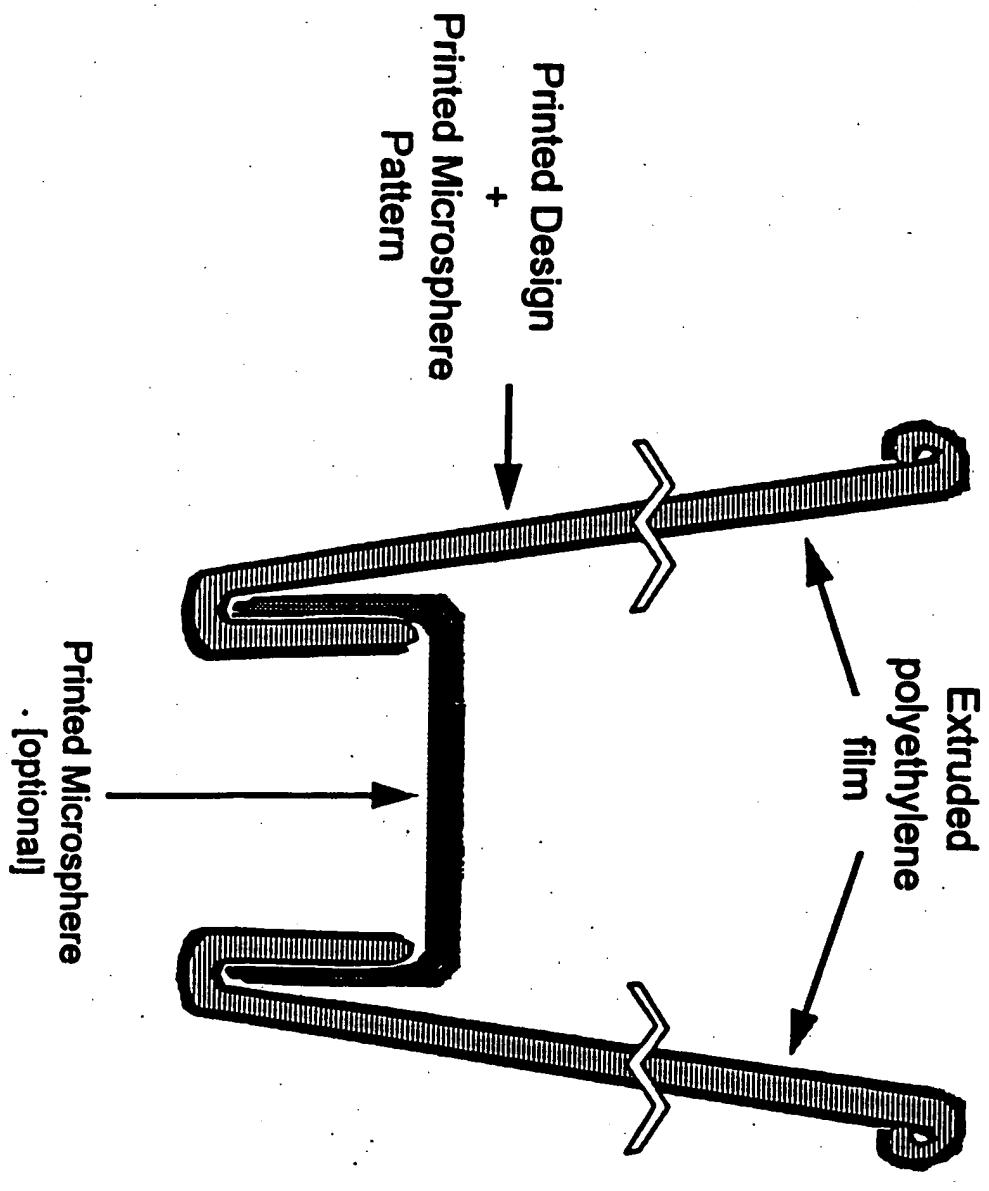


Figure 17

Wax and Polyethylene treated cups

b) polyethylene treated
(internal)

A) Wax treated

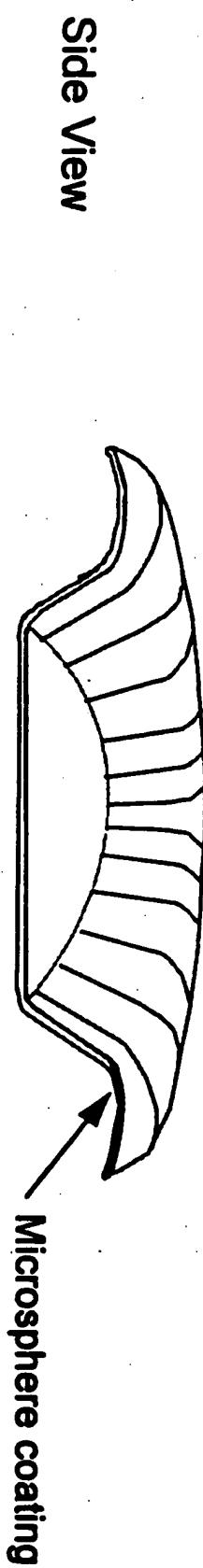
Atomized
Wax Spray

Microsphere
Containing
Spray
(External)



Figure 18

Plate



Side View

Top View

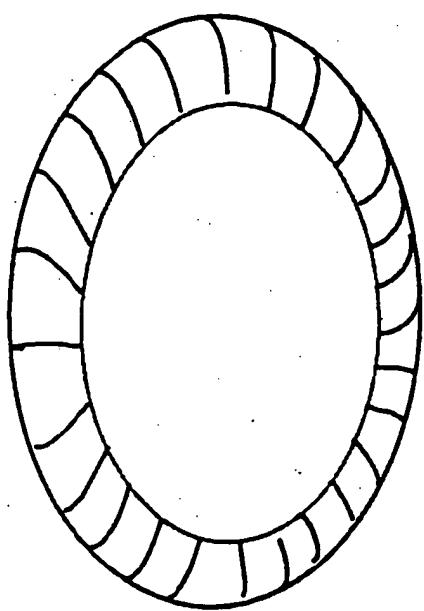


Figure 19

Bowl

Side View

Microsphere coating

Top View

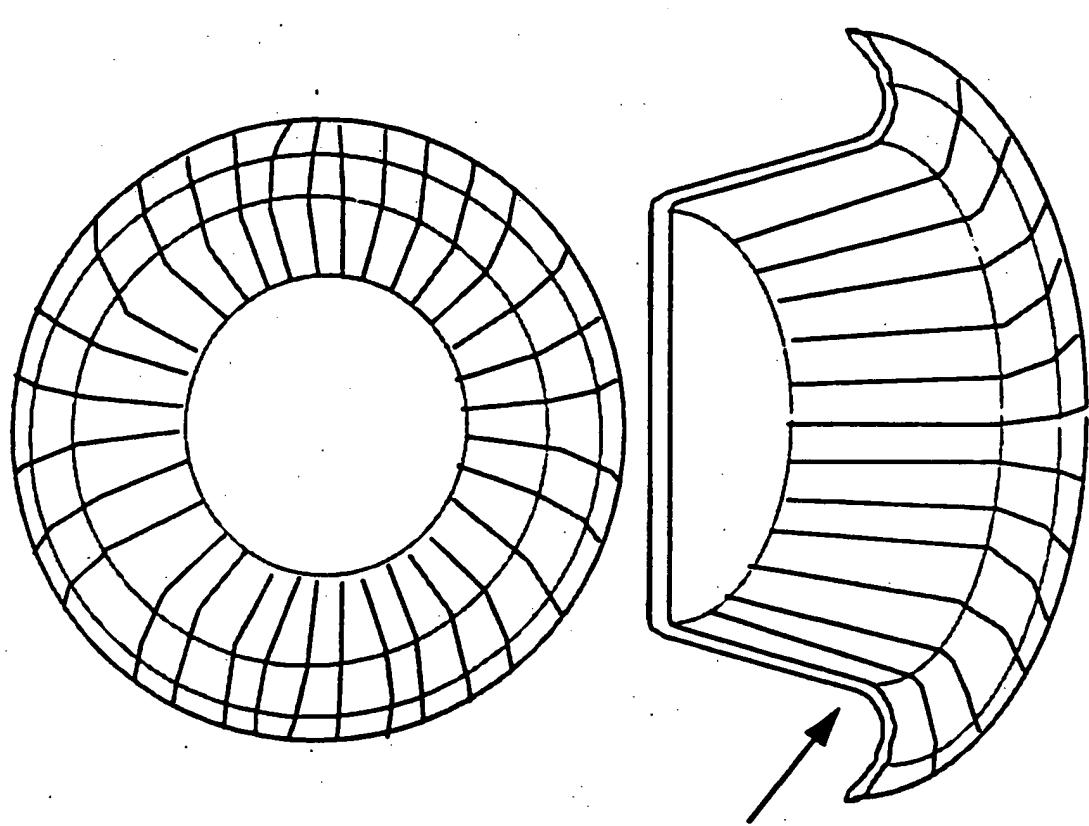


Figure 20

Canister

Side View

Microsphere coating

Top View

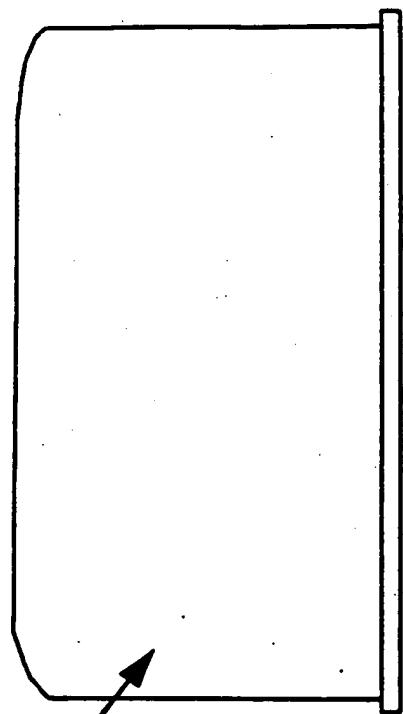
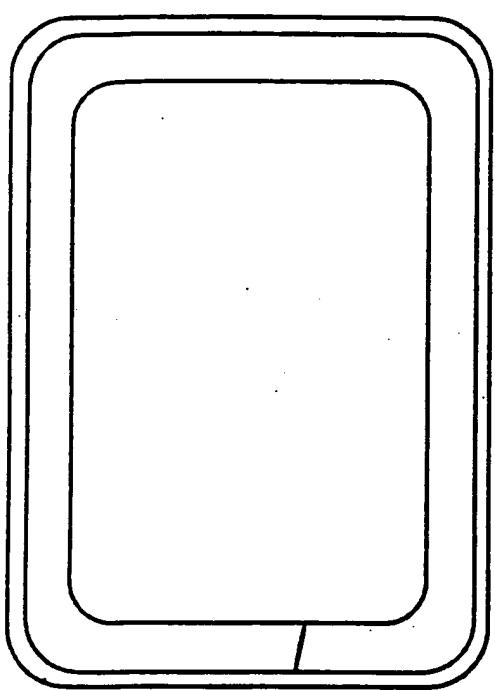


Figure 21

Compartmented Plate

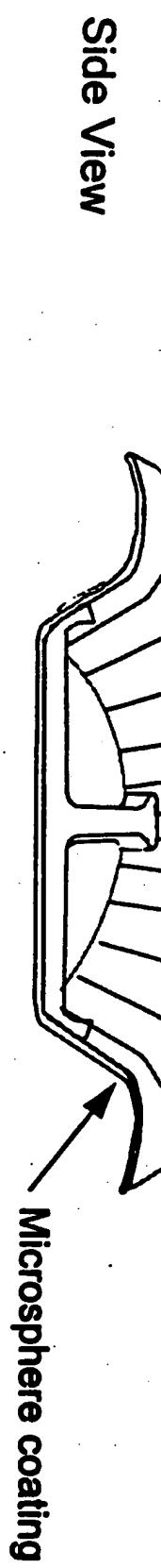
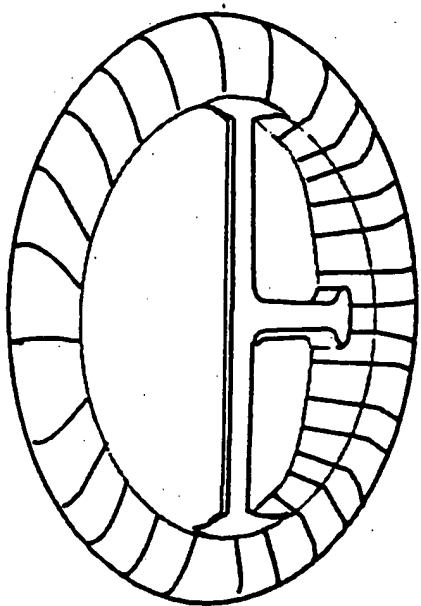
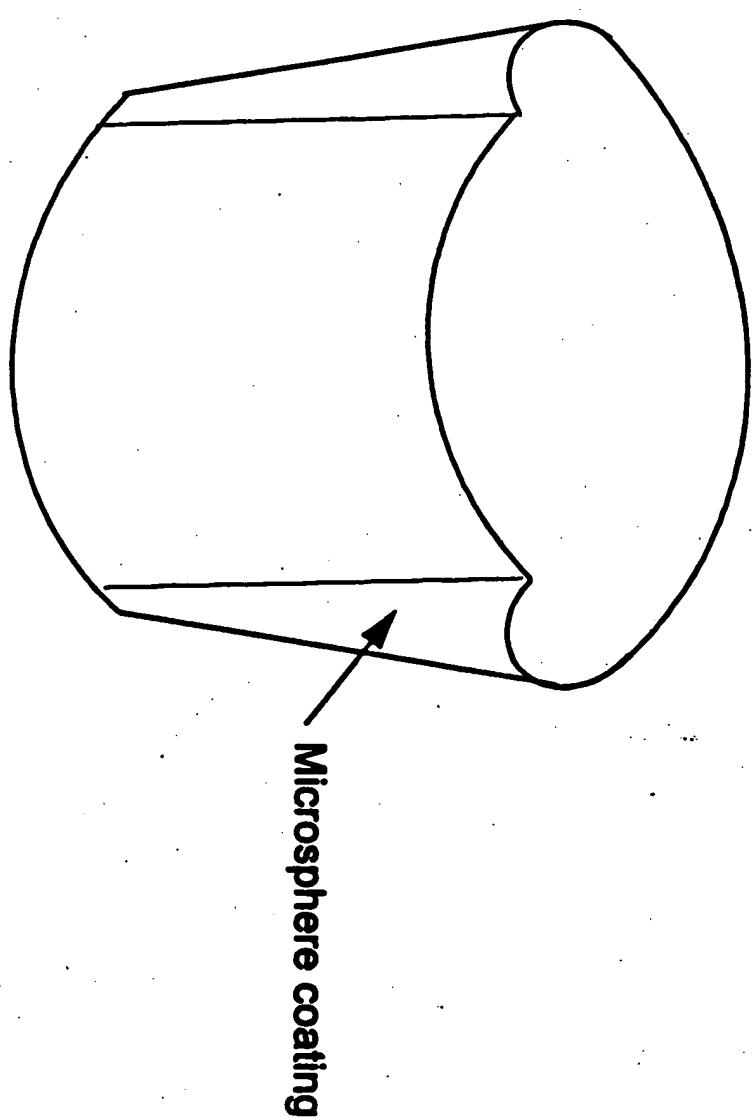


Figure 22

French Fries Sleeve

Side View



Rectangular Take-Out Container

Figure 23

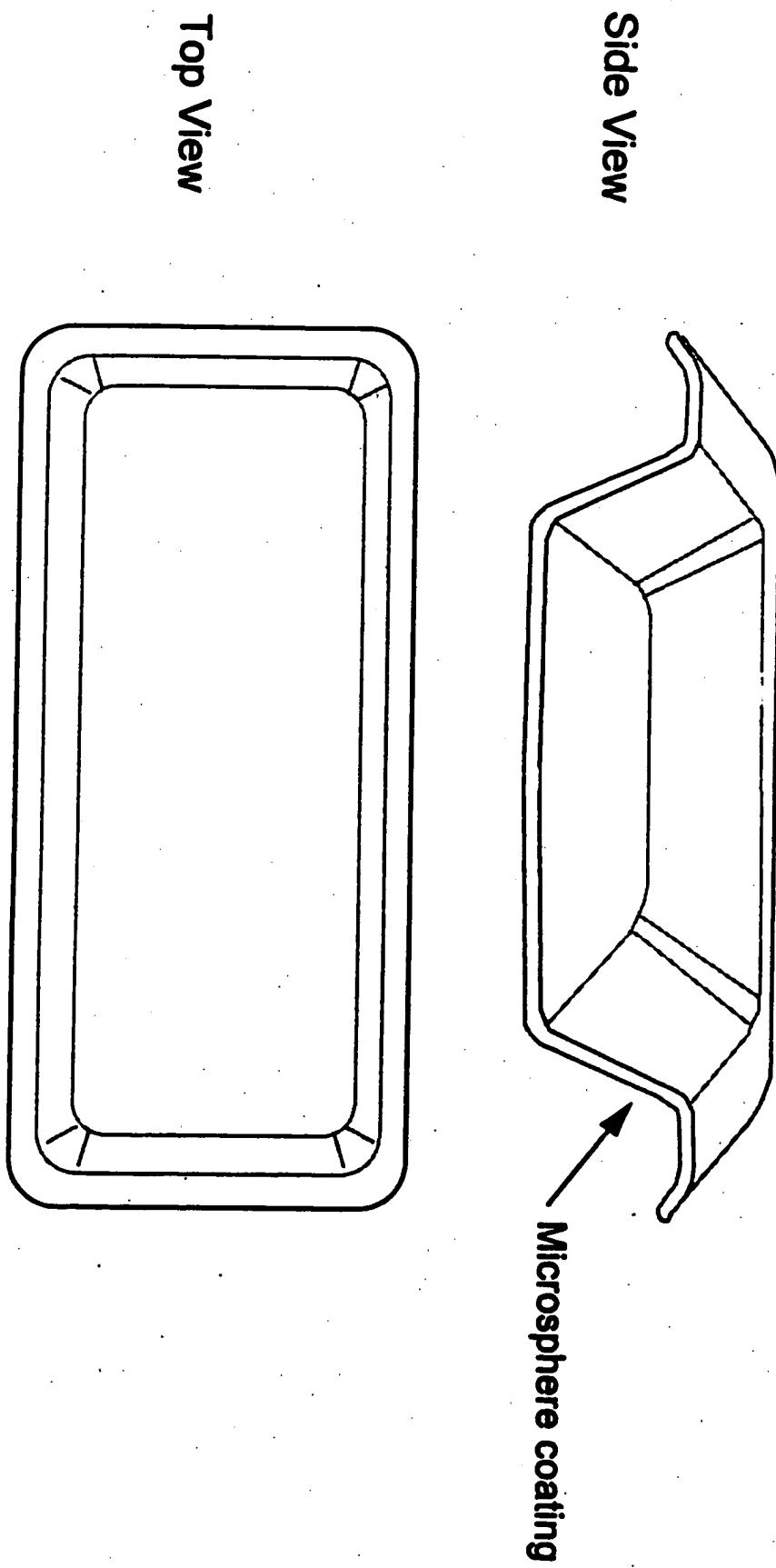


Figure 24

Hamburger Clamshell

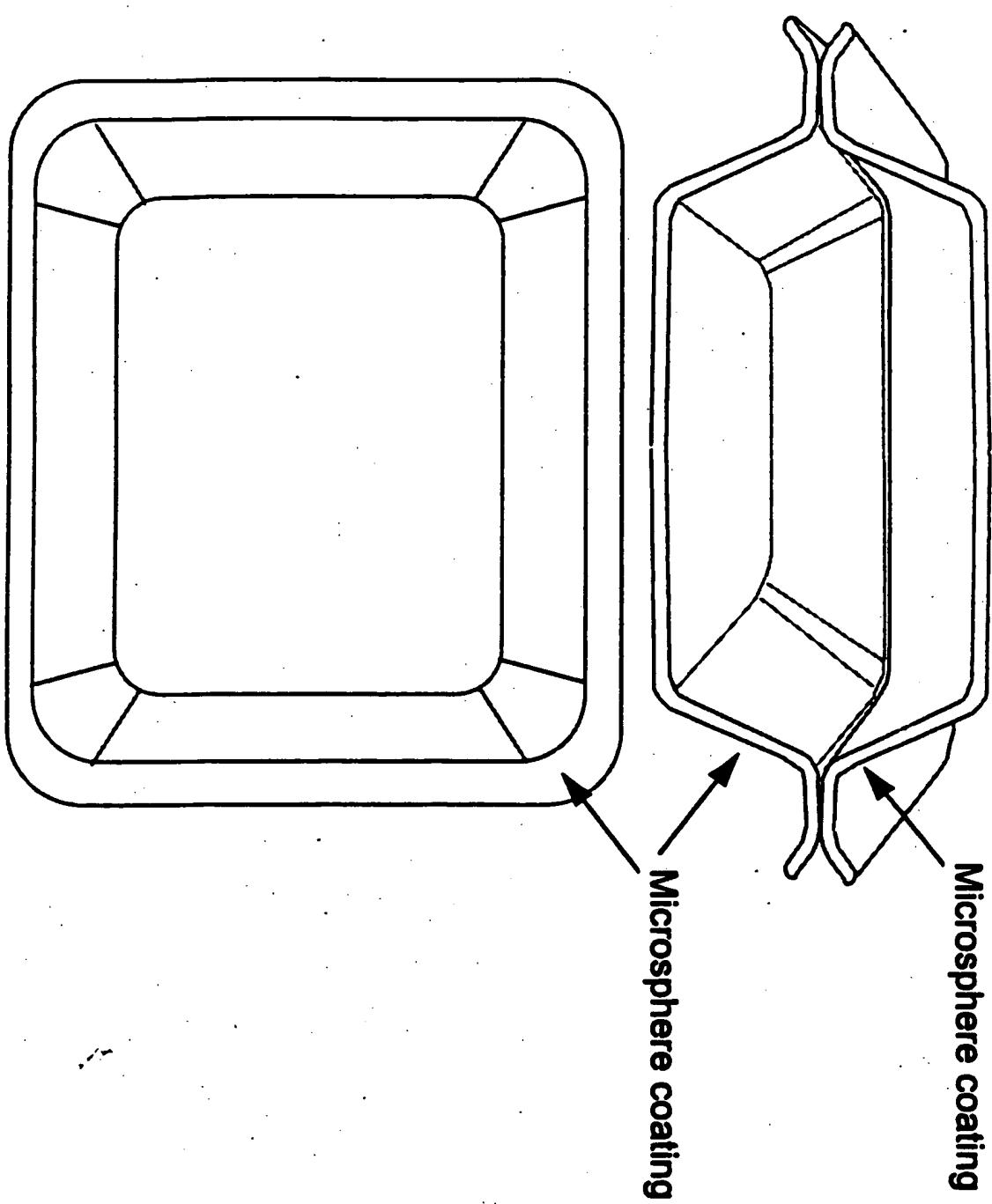


Figure 25

Cup

Side
View

Top
View

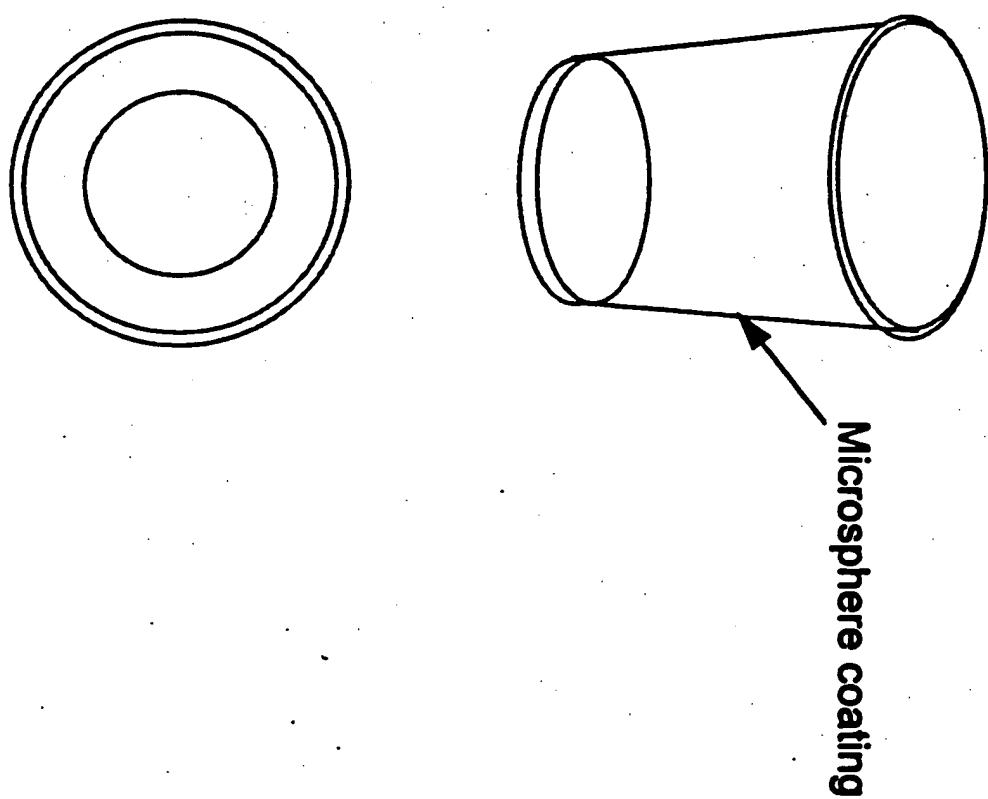
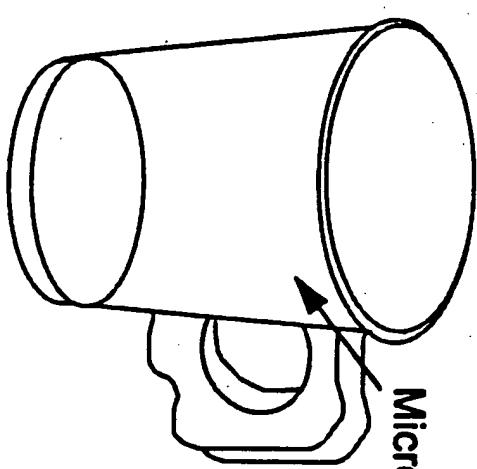


Figure 26

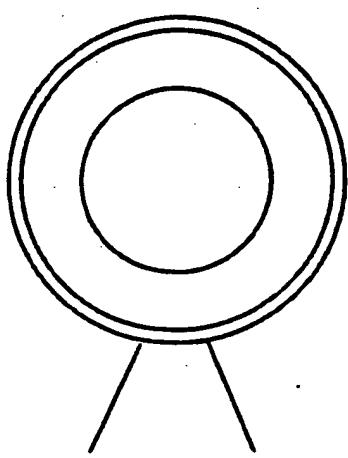
Cup

Microsphere coating



Side
View

Top
View



Food Bucket

Figure 27

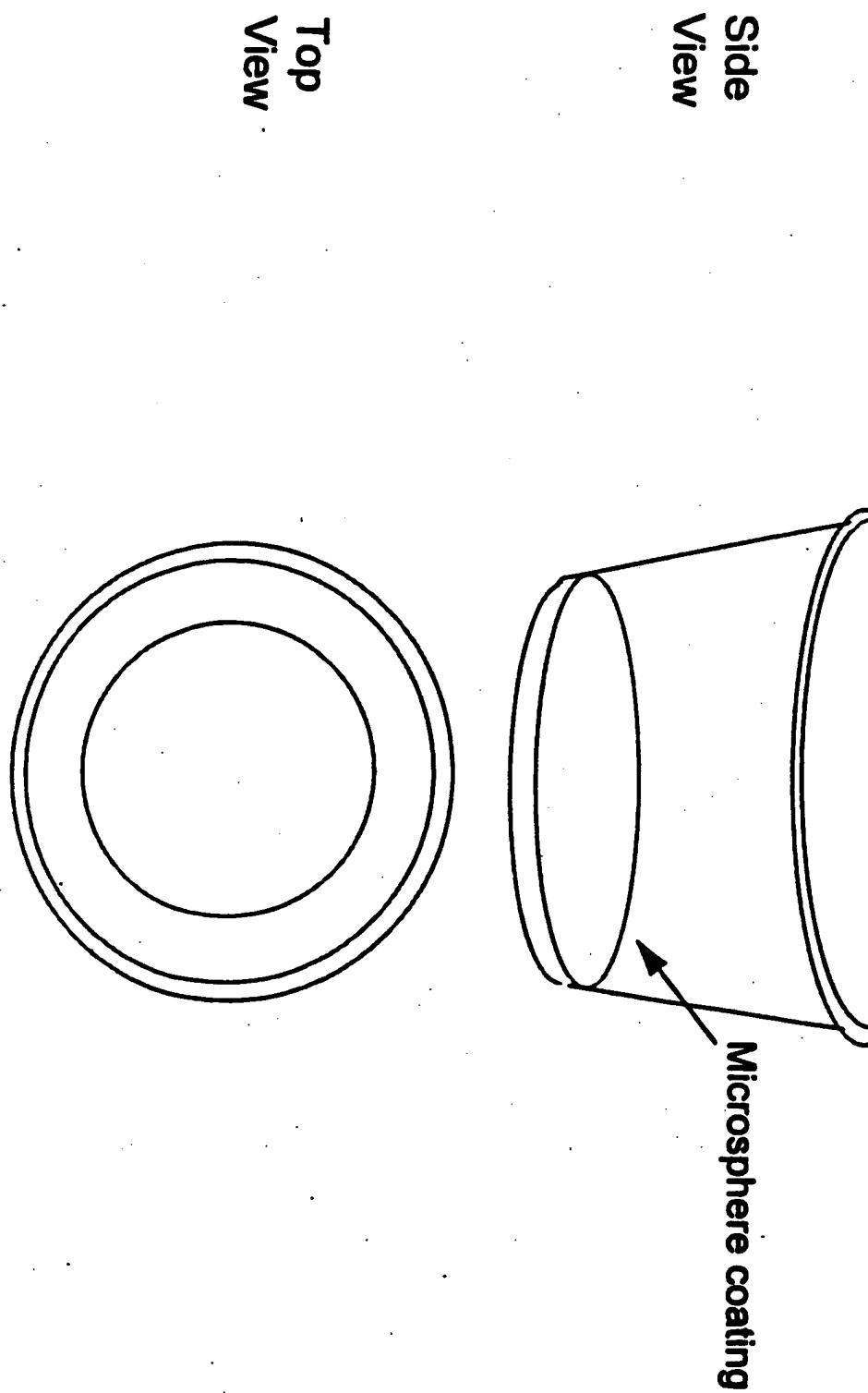


Figure 28

**Bowl with
Microwave Susceptor Layer**

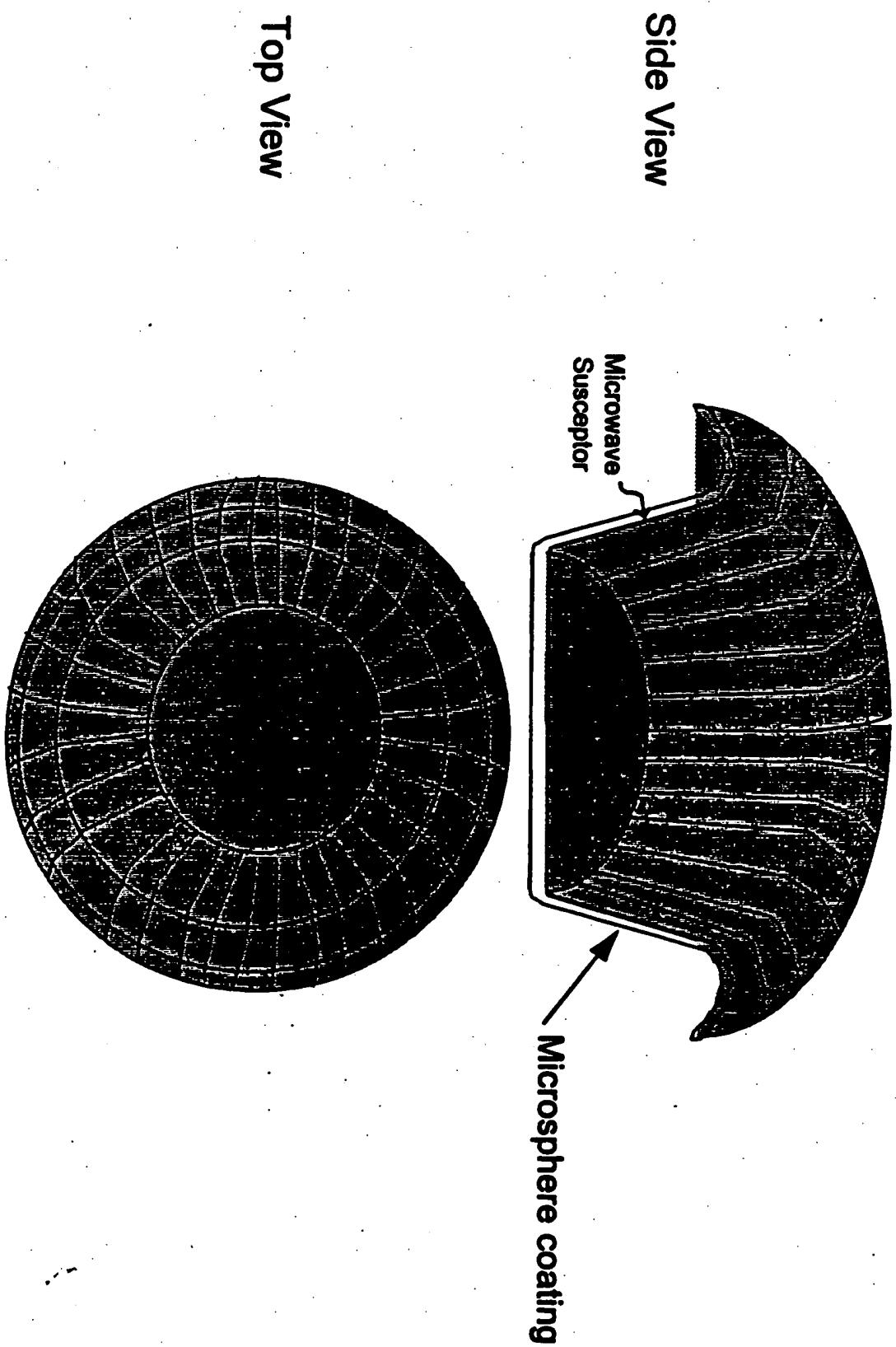


Figure 29

Food Container
with Microwave Susceptor Layer

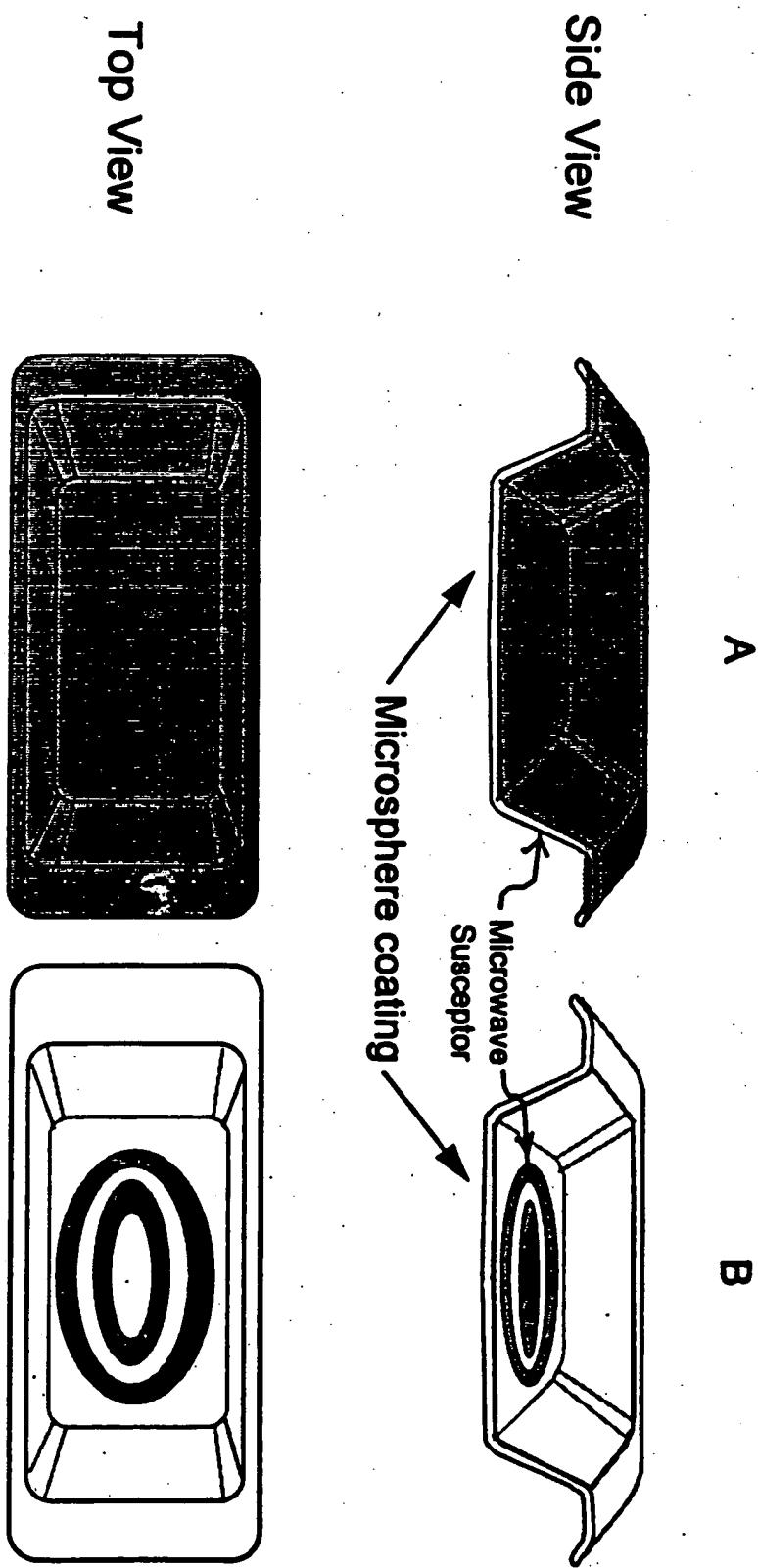


Figure 30

**Hamburger Wrap
with printed microsphere pattern**

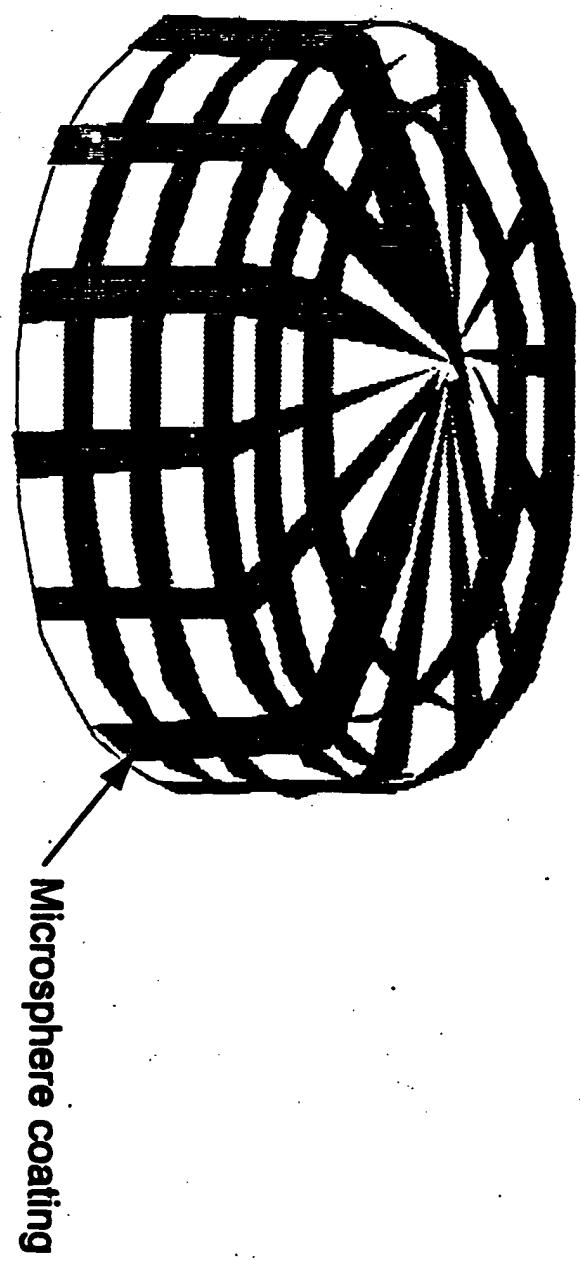
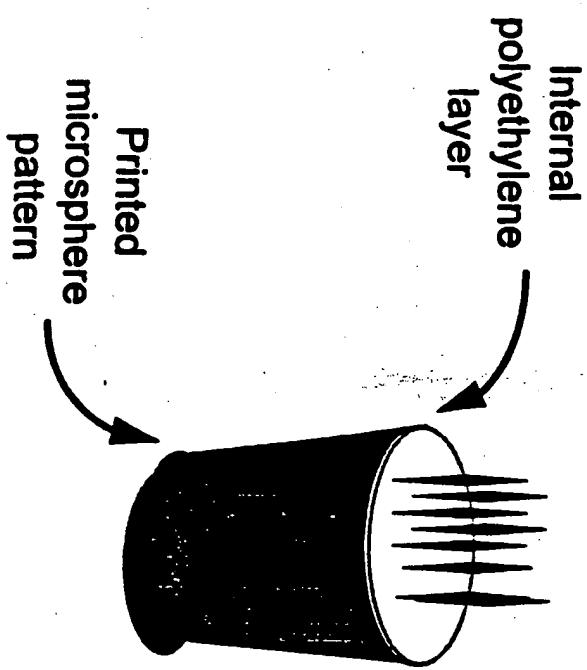


Figure 31

Application for hot & cold cups

Example 1



Example 2

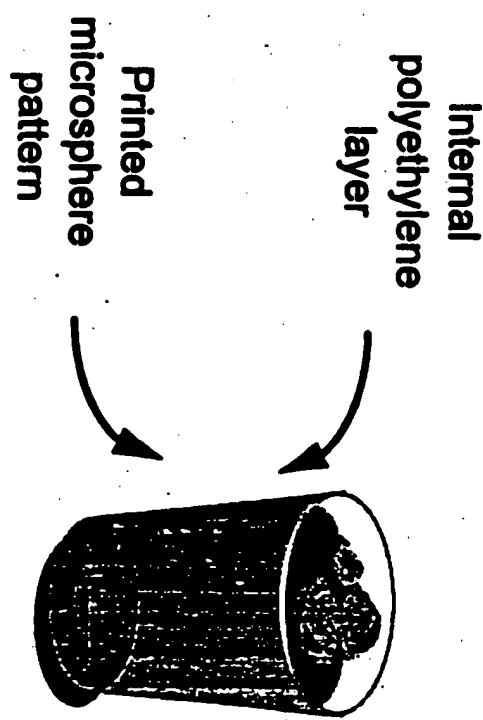


Figure 32
Hot Cup Hold Time VS Insulating Coating Thickness
for Coffee at 190°F

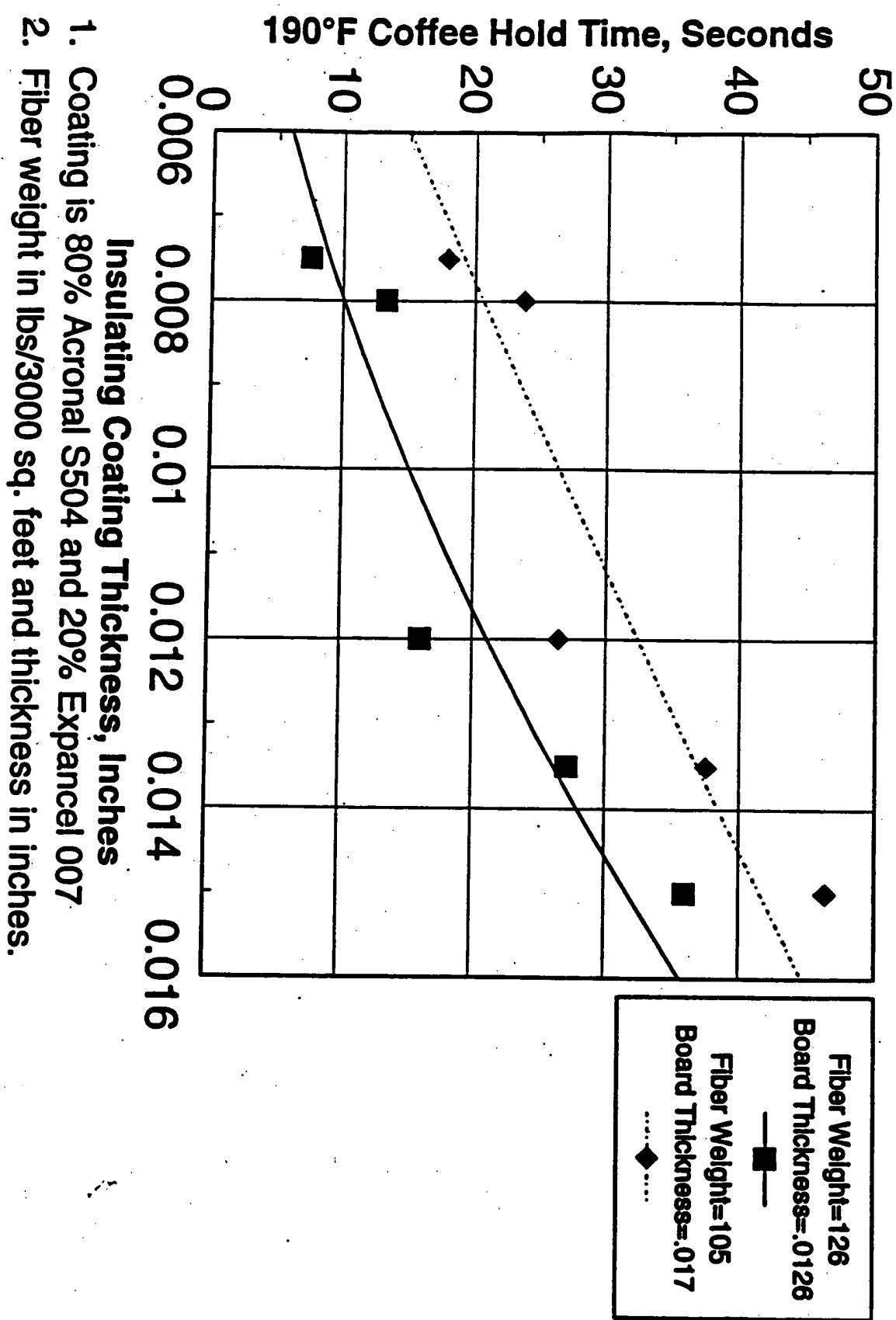


Figure 33

Hot Cup Hold Time VS Coating Thickness

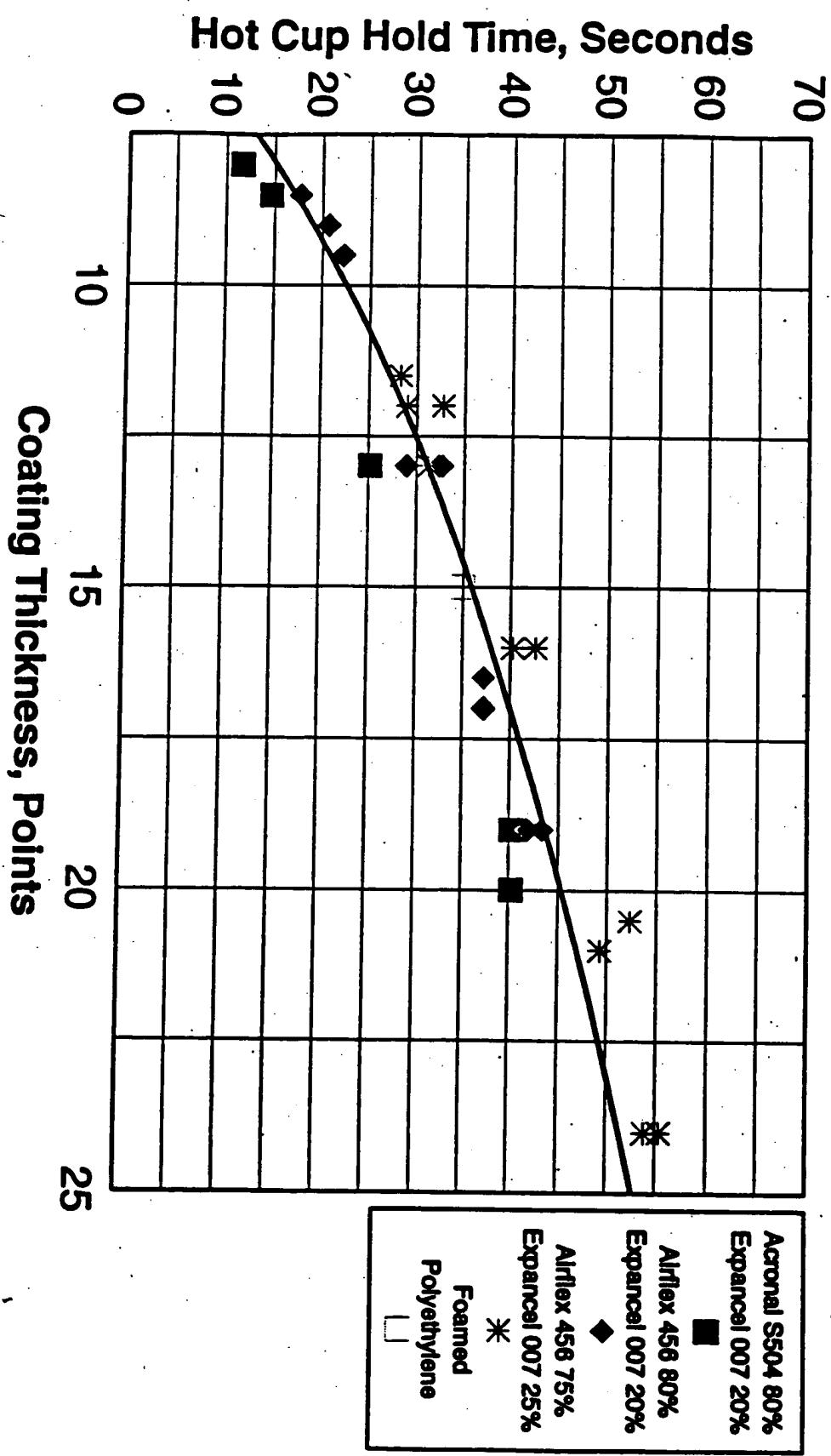
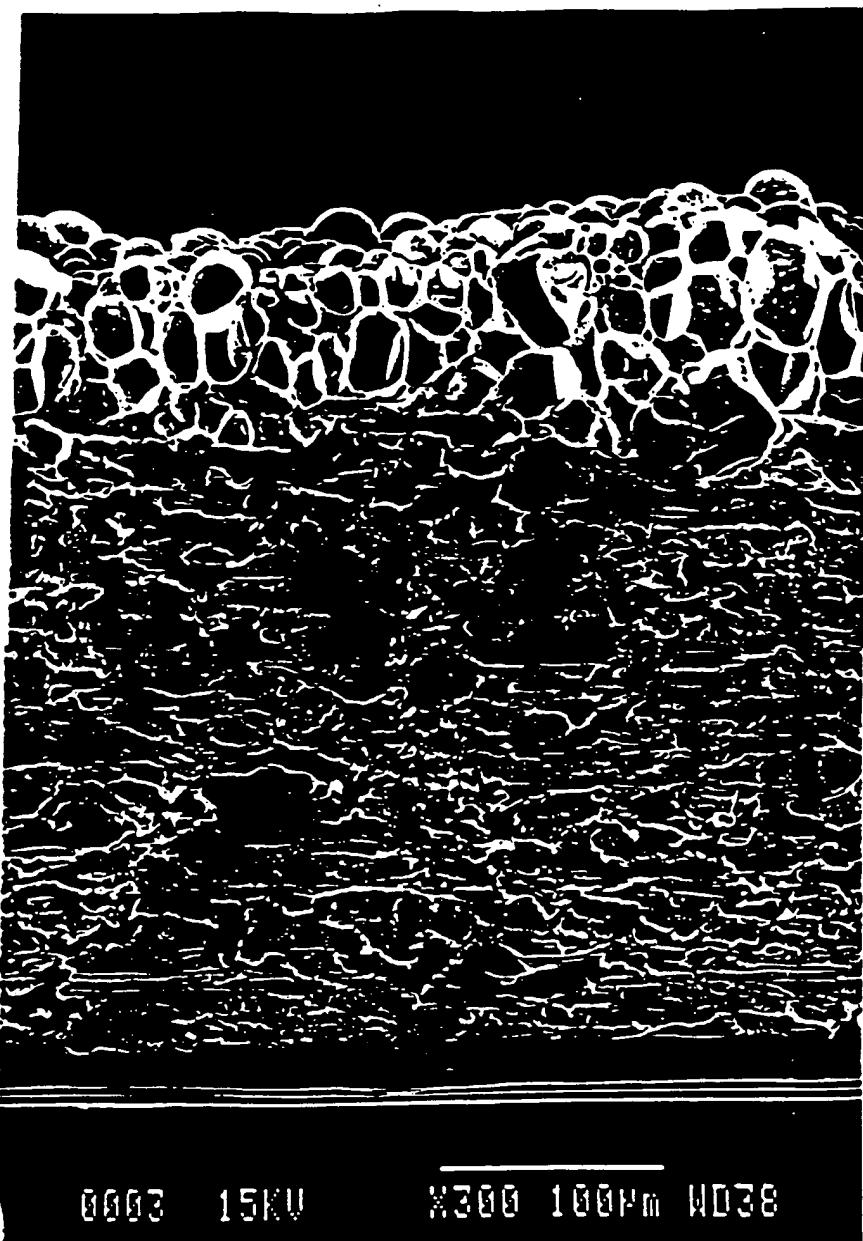


FIGURE 34



0003 15KV

X300 100μm WD38

FIGURE 35

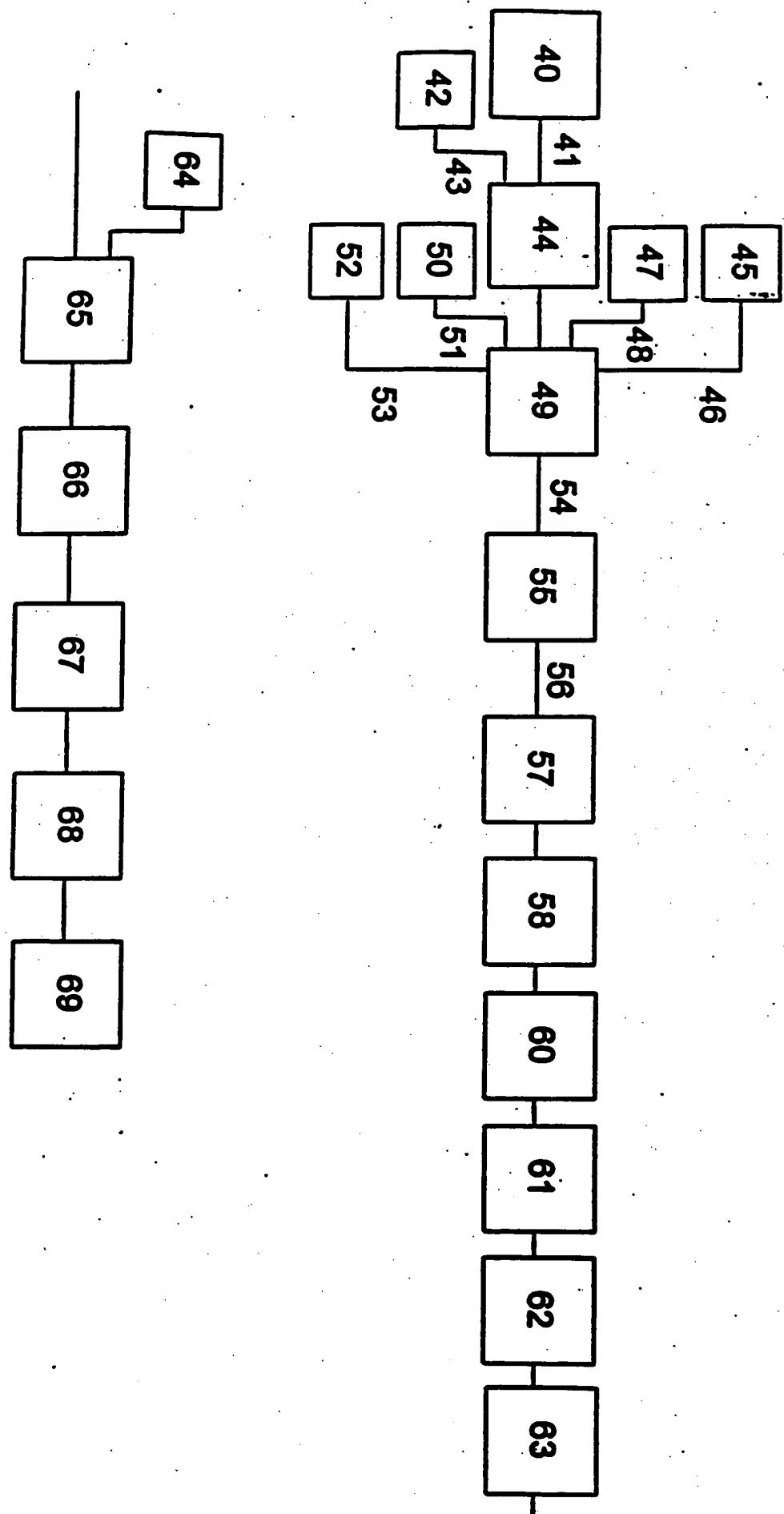


FIGURE 36

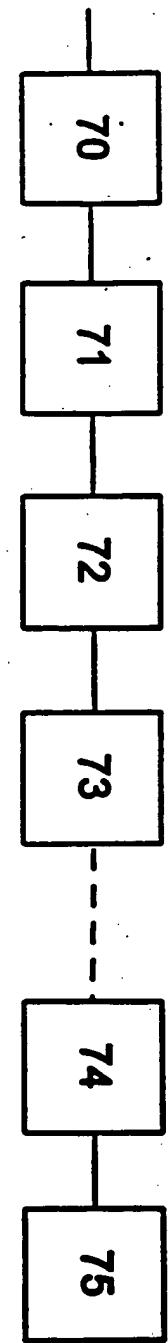
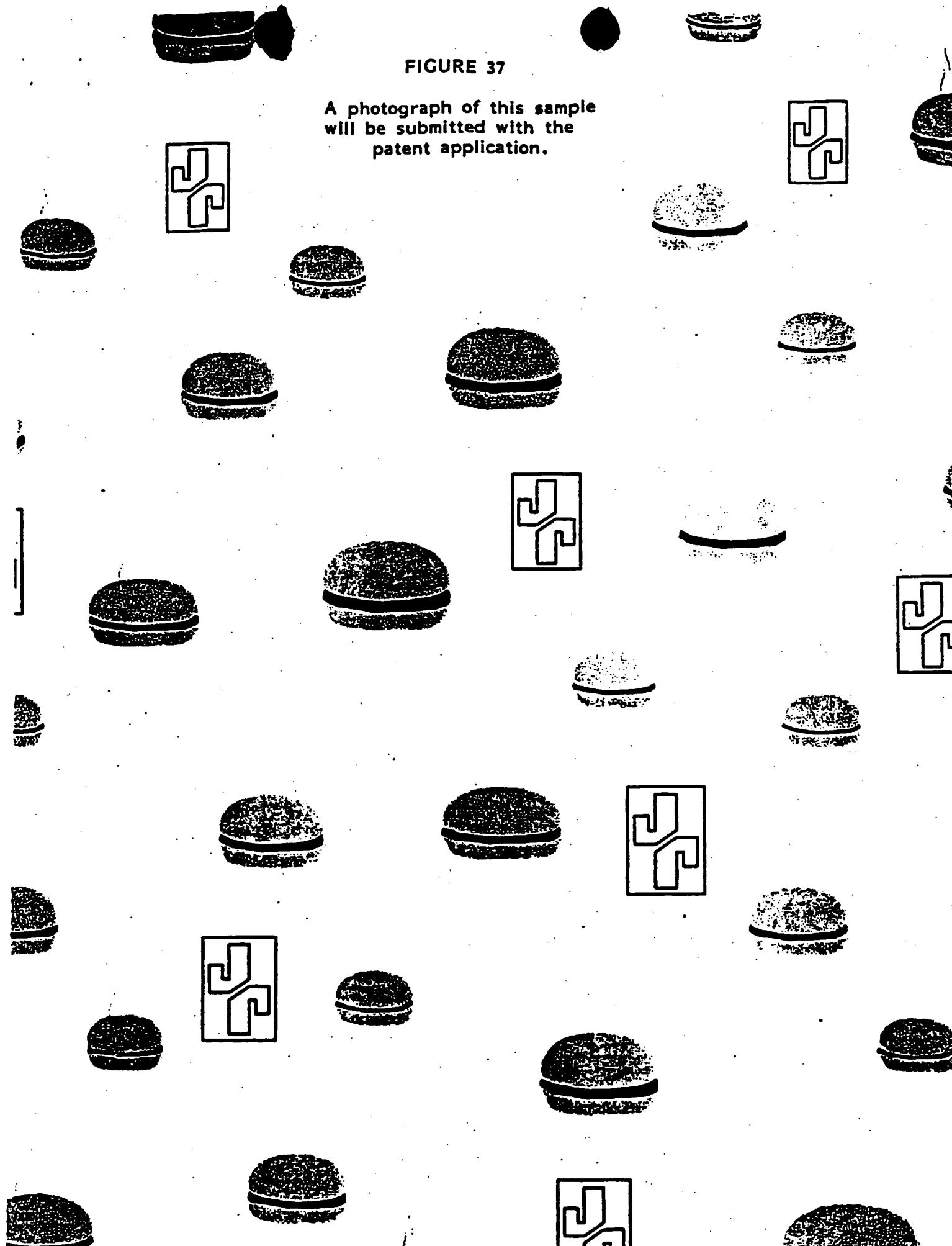
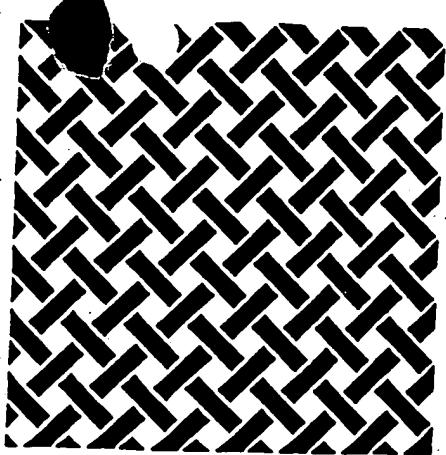


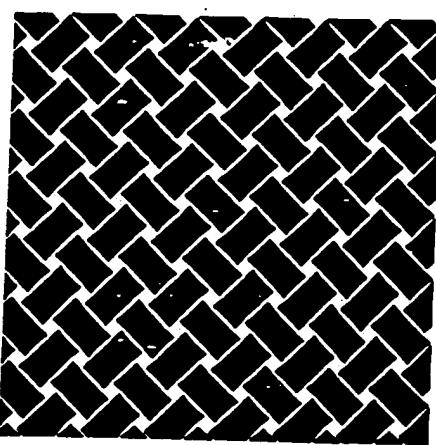
FIGURE 37

A photograph of this sample
will be submitted with the
patent application.





CUP 3



CUP 2

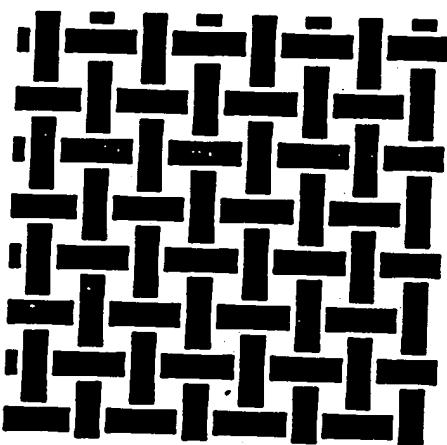


PLATE 6

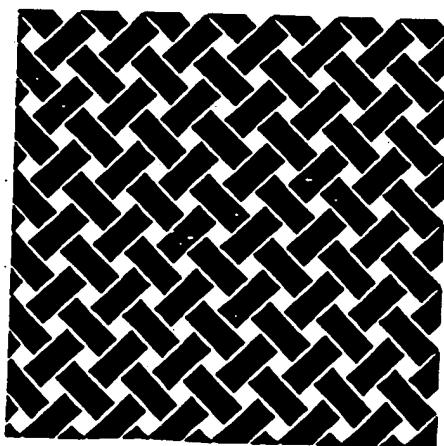


PLATE 5

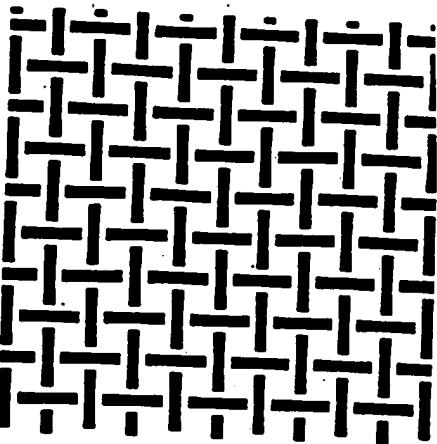


PLATE 4

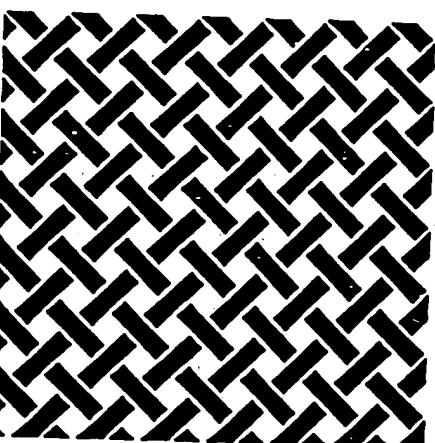


PLATE 3

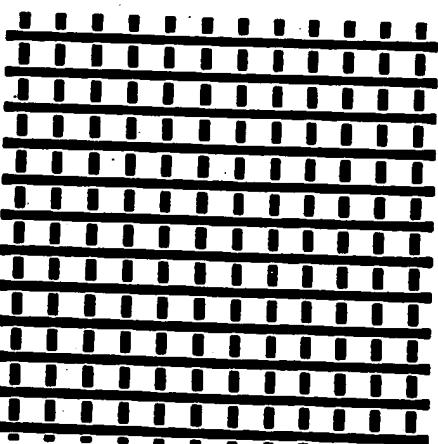


PLATE 2

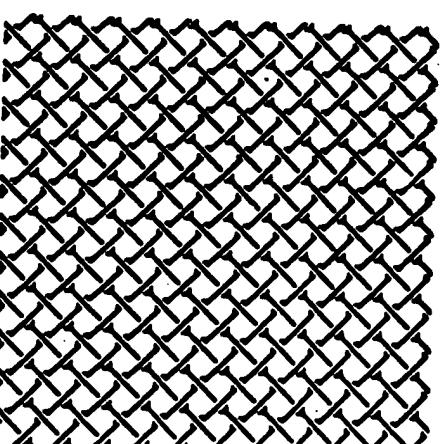
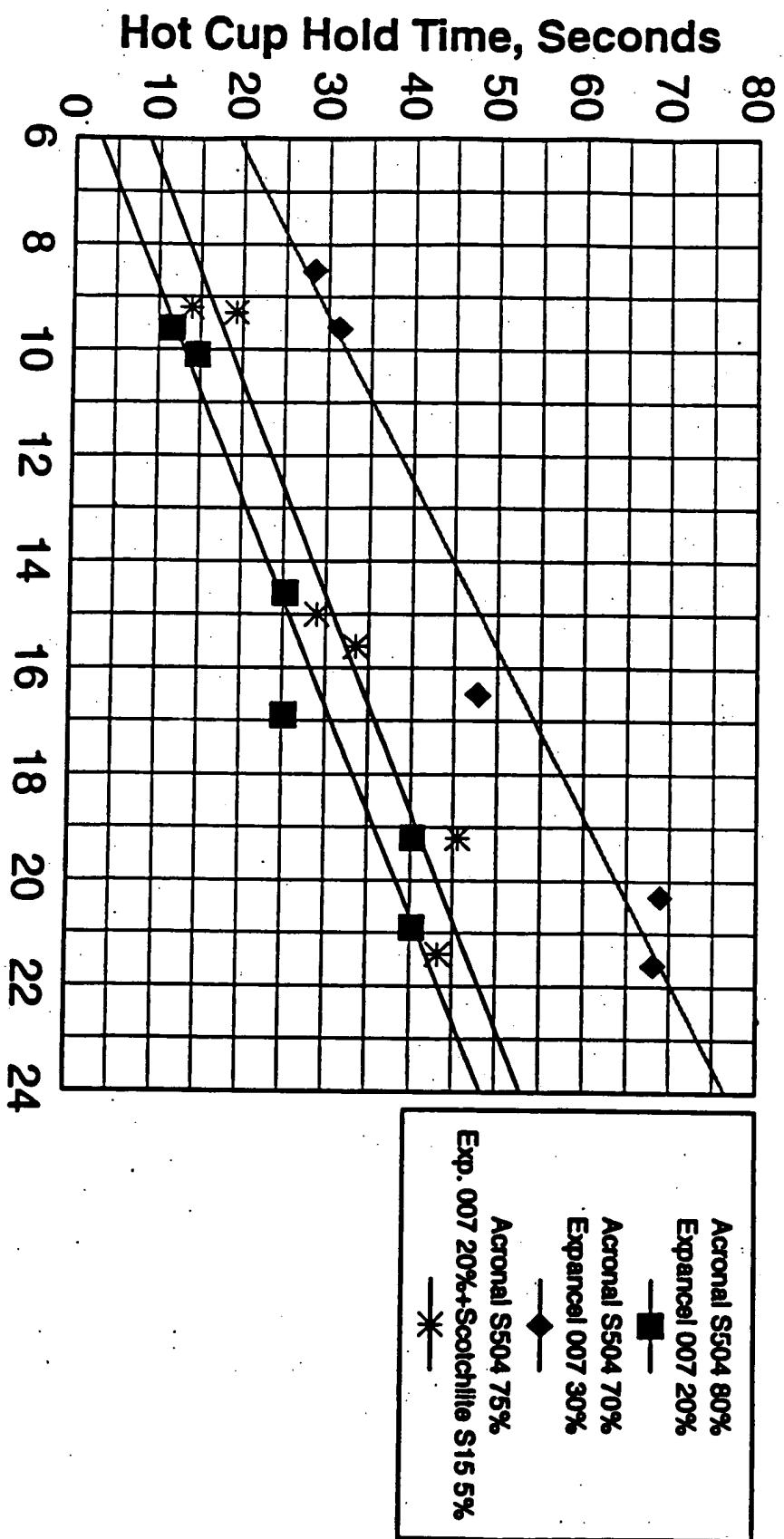


PLATE 1

Figure 39

Hot Cup Hold Time VS Coating Weight



Hold time was measured with the heat transfer test using the temperature model

Figure 40
Hot Cup Hold Time
VS

Sidewall Temperature After 35 Seconds

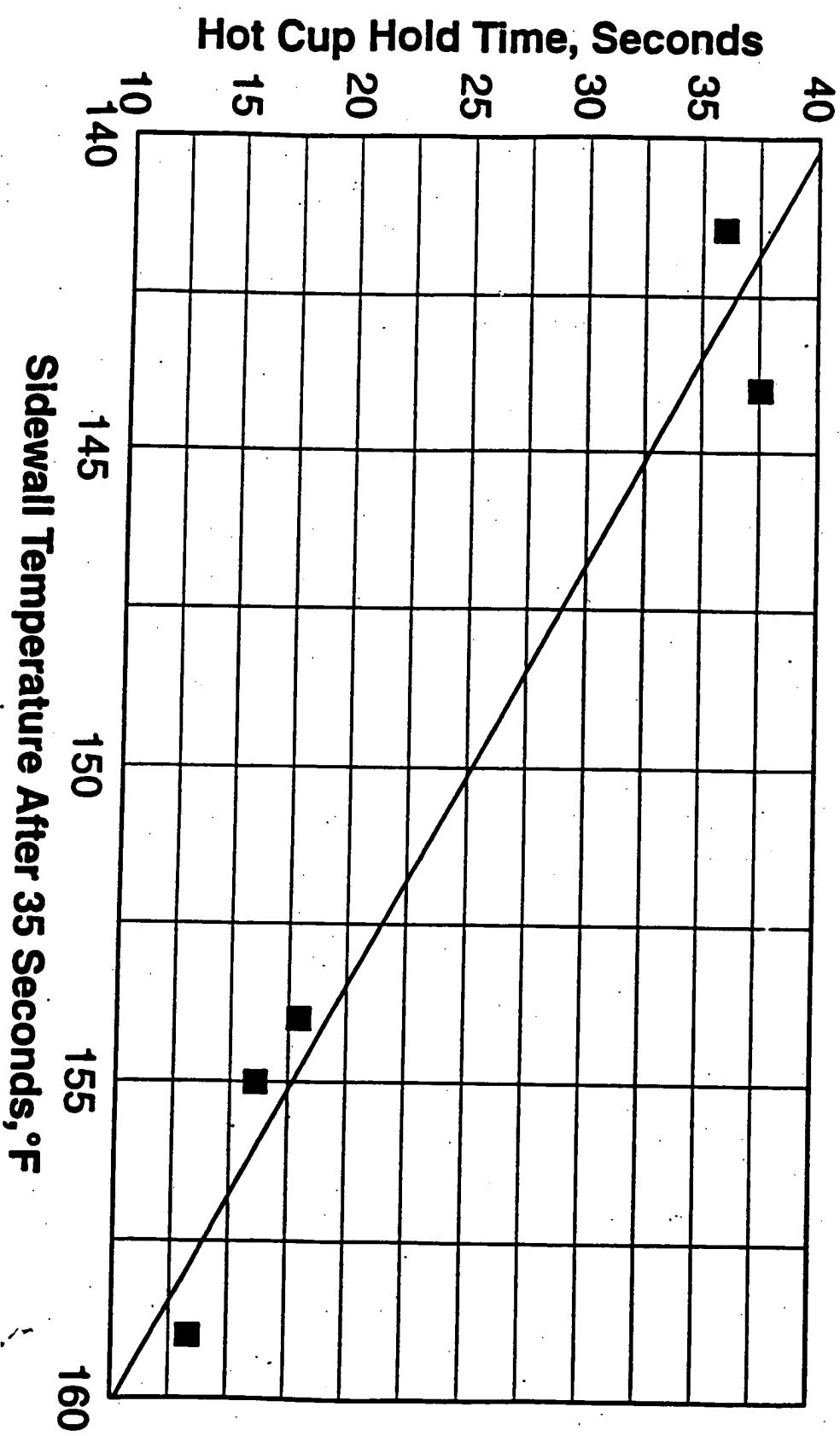


Figure 41
Hot Cup Hold Time VS Coating Weight

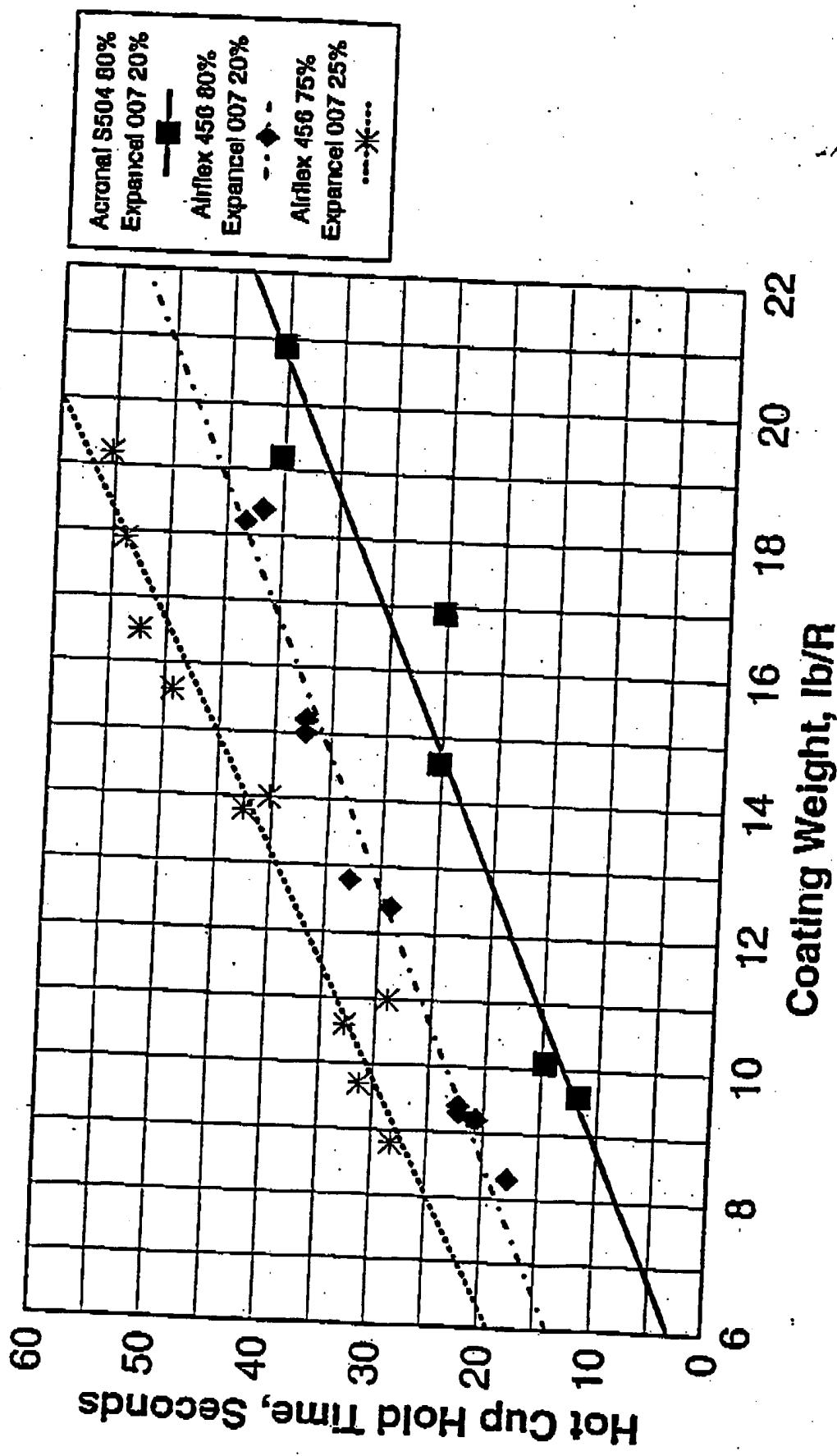


Figure 42

Hot Cup Hold Time VS Coating Weight

